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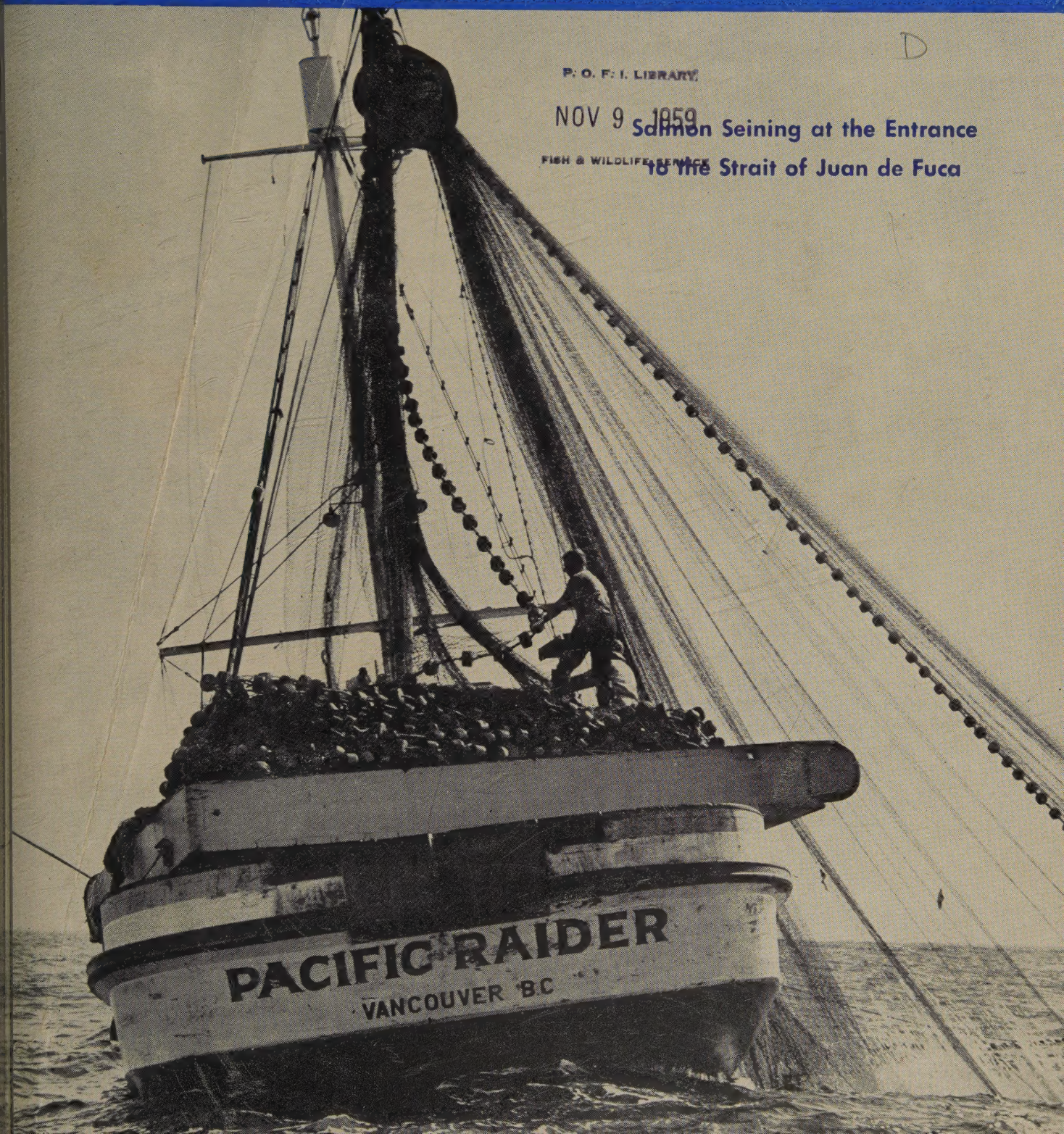

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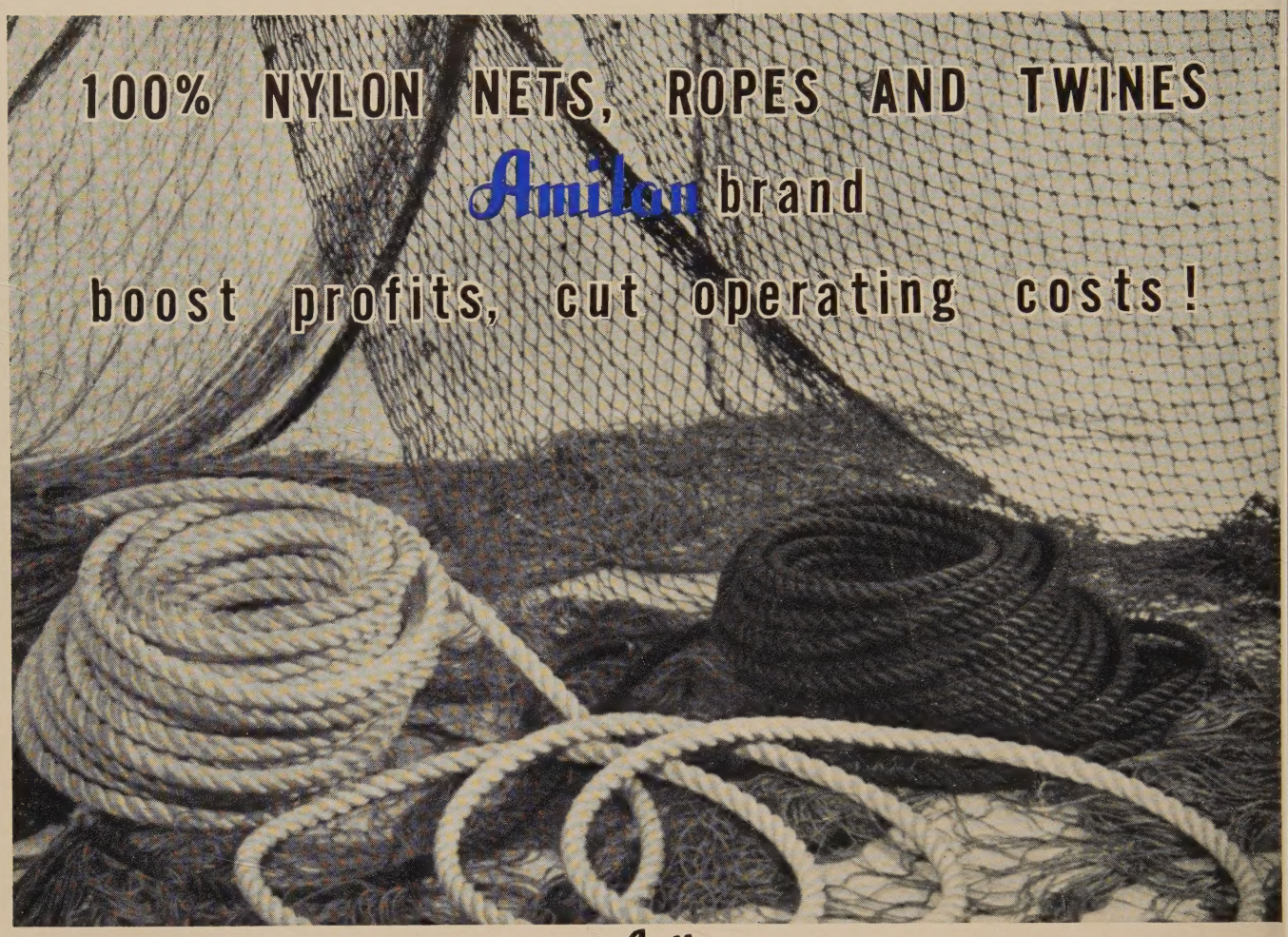

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Table of Contents

Tuna's Fate in Tokyo 5
Int'l. North Pac. Fisheries 7
B.C. Salmon Picture Bright 9
Paita—Peru's Ancient Port 10
Locating Fish with Echo 18
Aluminum Gillnetters 26
Optimum Escapement 31
The Salmon Market in London . . 37

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Chile Looks for the Answers

Senators Tour U. S. Fishery Operations

● Seeking the answers to problems involved in the more adequate development of the fishery resources of their country, three Chilean senators recently completed a six-weeks tour of U.S. fishery operations, ship-yards and manufacturers supplying the fishing industry.

The group, headed by Senator Eduardo Frei Montalva, included Senators Guillermo Perez de Arce and Jun Antonio Coloma Mellado.

In discussions with *Pacific Fisherman* the Senators made the point that they felt that the greatest need of their country was for additional boats, gear, and men to man the vessels who had the "know-how" as successful fishermen. The primary interest of the group is to develop the Chilean fisheries as a more important industry to the economy of the country thus returning greater income to Chile. They felt that the fishing industry offered great possibilities toward a greater diversification of industry within Chile.

● Of immediate interest to them was, of course, the field of fish reduction. Existing plants have considerable capacity not now being used and the experience of Peru looms large in their thinking. Prime consideration is being given to the expansion of the fishery for fish-meal production and to the development of markets for Chilean fish meal throughout the world.

● In the long range however, their thinking indicated that they were most interested in improving the "climate" for foreign investment in the fishing industry. Expressing their opinion as legislators interested in economic matters, they felt that there was a need for local investment but, more important, a need for heavy foreign investment following the Peruvian example.

The Senators stated that the present administration in Chile will encourage and reinforce investment in Chilean industry. The attitude of the government is, they said, to make it easy for capital to be invested and the profits to be "repatriated." At present a bill is being considered in the Chilean legislature to encourage fishing by making some tax reductions possible. This, however, has not yet been accomplished although the group seemed to feel that it was just a matter of time.

● The Senators pointed out that there were four methods of capital investment which presently were being encouraged in the Chilean fishing industry. First, investment by individuals; second, by foreign agencies; third, by foreign subsidiaries of U.S. companies; and fourth, by foreign companies directly in combination with local investment. All were being encouraged by friendly governmental attitude and assistance.

The group indicated that Chile was most interested in the development of other fisheries than for reduction but that they felt the latter offered the most immediate return. Tuna export, both canned and frozen, looms large in their thinking as an exportable fishery product with excellent possibilities.

One of the problems involved with the Chilean fishery, according to the group, is the fact that the local market is quite limited and thus the export market has importance somewhat beyond their capacity to produce.

● One of their prime concerns in their study of the U.S. fishing industry was the supply function and even more important, shipyard operation. They stated that Chile has few adequate facilities for the outfitting and supply of a fishing fleet of any size and virtually no shipyards capable of handling their own fleet much less any expanded fleet. It is in this area that they feel there is the best outlook for certain segments of U.S. industry.

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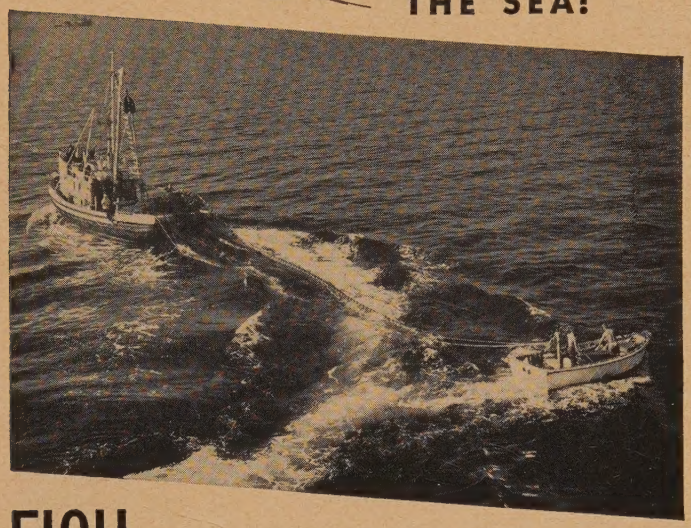

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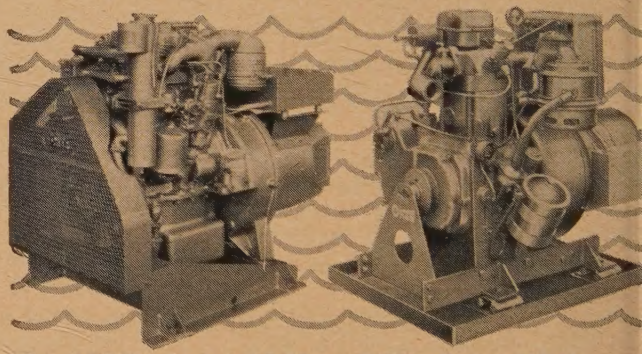

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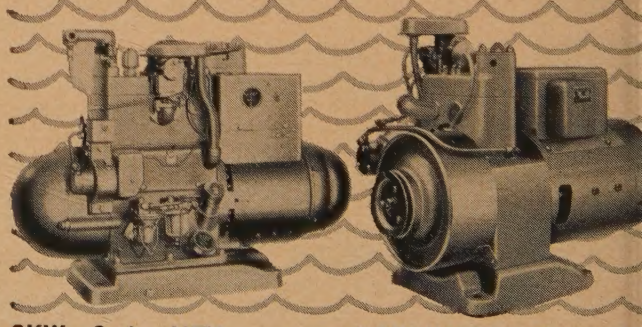

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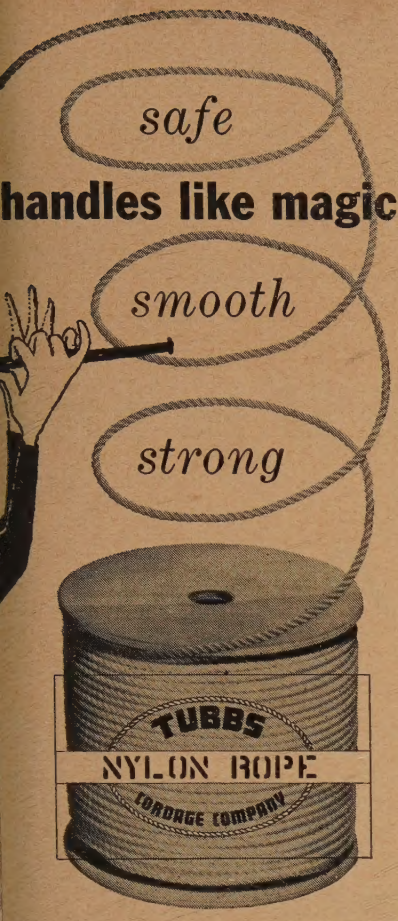

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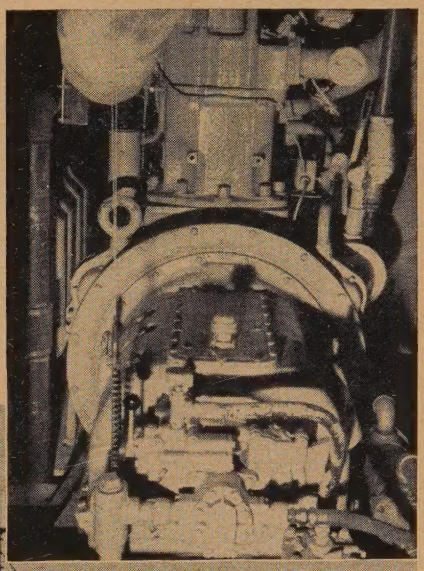

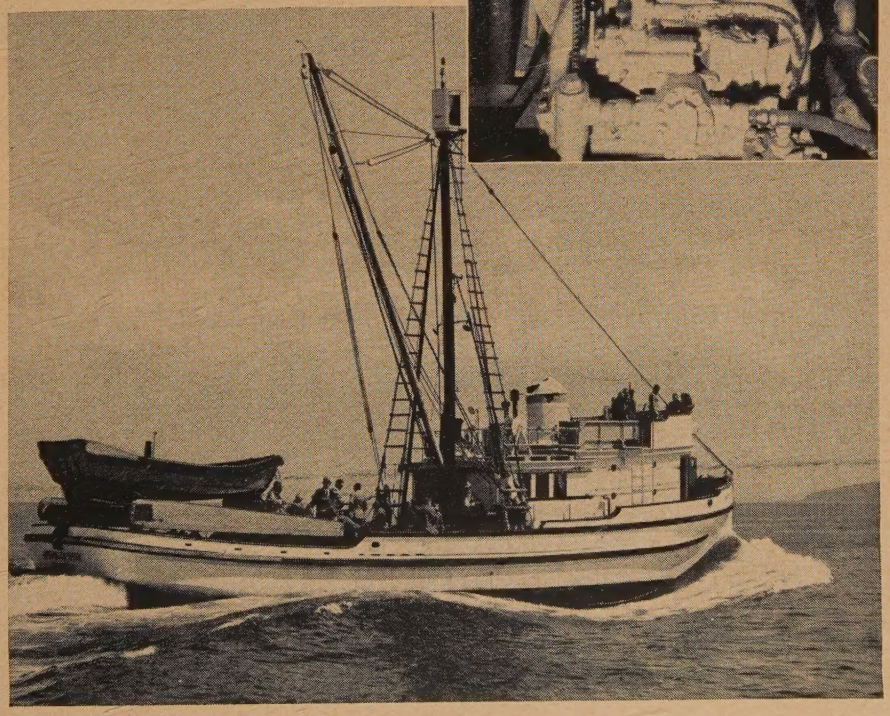

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PACIFIC FISHERMAN October, 1959

Fate of U. S. Tuna Fishing Rests on Tokyo Meeting

As this magazine went to press, representatives of the United States and Japanese governments, with executives of their respective tuna industries sitting in as advisors, were beginning an unprecedented series of talks.

From the U.S. point of view, the purpose of the gathering, to be held in Tokyo beginning at the end of September, is to find some means of halting the decline of the U.S. tuna fishing industry, which in the past few months has almost hit bottom. U.S. tunaboat owners say that the decline is caused by an increasing "flood" of low-priced imported tuna from Japan. This competition, they say, has so knocked down the price of their own U.S. catch that they can no longer afford to fish.

If they are to continue in business, they say, some method must be found to bring up the price, or lower the cost, of the U.S. catch. That's for the long run. For the immediate, critical present, the boat owners and fishermen want some means of metering the in-flow of Japanese fish, so that the U.S. fishermen will have a chance to sell their catch at a reasonable price to the canners.

Control Talk Tabooed

Privately, the almost unanimous opinion of all segments of the U.S. tuna industry is that the subject of most immediate urgency is control of United States imports of tuna from Japan.

But officially, the subject of control of imports or prices is banned from discussion at the meeting.

Privately, it is the almost unanimous opinion of the Southern California tuna industry that import controls will be discussed in some way or other during the period of the Tokyo talks. But officially the representatives of the U.S. industry are agreed on an agenda which specifically excludes any mention of import or price controls.

The ban on discussion of controls was imposed by the U.S. State Department, on the ground that any "negotiated voluntary controls" would be in "basic conflict" with the U.S. Government's policy of encouraging "free competitive enterprise, both domestically and internationally".

So the U.S. delegation is going to Tokyo agreeing not to discuss the subject widely considered of most immediate importance.

A Five-Point Agenda

Officially, the U.S. delegation will sit down to the meeting with a five-point agenda as follows: (1) Conservation; (2) Efficiency of Harvesting; (3) Quality of Production; (4) Efficiency of Marketing; (5) Market Research and Development.

The U.S. delegation will consist entirely of Government men, this being officially a Government-to-Government discussion. The industry representatives will attend as advisors.

Heading the U.S. group will be William T. M. Beale, deputy assistant Secretary of State. With him will be Donald McKernan, director of the Bureau of Commercial Fisheries, Department of the Interior; Harold B. Crowther, chief of the Bureau's division of Industrial Research and Services; Clyde Taylor, fisheries biologist from La Jolla, Calif.; Arne Suomela, commissioner, U.S. Fish & Wildlife Service; Don Johnson, Bureau of Commercial Fisheries area director for California; Arthur Sandberg, of the Industrial Research & Services; and Gerald Howard, director of the Bureau's biological laboratory, San Diego.

The industry advisory group will consist of the following:

Representing the major canners: J. Bogdanovich of Star-Kist Foods, and Glen Copeland and Harold Cary of Van Camp Sea Food Co. Representing independent canners: Max Gorby of California Marine Curing & Packing Co. and Tom Sandoz of Columbia River Packing Assn. Inc. Representing the boat owners: Dr. Wilbert M. Chapman of the American Tunaboat Assn. and Anthony Nizetich of the Fishermen's Cooperative Assn. Representing all canners: Charles Carry, California Fish Canners' Assn. Representing the albacore boat owners: Either Pete Repovich of California Commercial Fishermen's Assn. or M. E. Stewart of Five-Star Fish & Cold Storage Inc. Representing the working fishermen: John Royal, Fishermen's Union, Local 33 and Lester Ballinger, Cannery Workers & Fishermen's Union, San Diego.

Many Angles, Many Views

Without a doubt, the present situation of the world tuna industry is one of the most complicated subjects that the mind of man has ever had to struggle with. The subject has a million ramifications, and almost as many overlapping and conflicting interests. For the benefit of its readers, *Pacific Fisherman* has tried to canvass all segments of the U.S. industry to try to determine what can be expected or hoped for, from the coming discussions with the Japanese.

Naturally, there are many differing views.

But on one point all sides agree. Some good is bound to come from an open, frank discussion of all industry

The Meeting Is On

(*A Staff Report*)

Tokyo, Sept. 27—It is at last reported that the U. S. - Japanese intergovernmental tuna meeting will be held for 10 days beginning Sept. 30, with *four* subjects on the agenda.

There is yet no report of formal appointment of Japanese representatives, but it is expected they will include: Director, Kenjiro Nishimura; Chief, production department, Seizo Takeda; chief No. 1 Research and Investigation section, Toru Sone. And from industry, Kenkichi Nakabe, Export Frozen Tuna Manufacturers Assn.; Tomohachi Veta, Japan Export Canned Tuna Manufacturers Assn.; and Shoich Masuda, Federation of Japan Tuna and Bonito Fisheries Cooperative Associations.

Tokyo, Sept. 23—A newspaper report in Japan has stated that Japan accepted the American invitation to a Government Tuna Meeting with the stipulation that the agenda be acceptable to Japan. No report has been seen as to the exact opening date or the names of the Japanese representatives.

A Japanese trade newspaper dated Sept. 22 carried an article which stated that Japan had provided for only three items of agenda:

(1) Research and conservation of tuna resources—biological and oceanographical study.

(2) Efficient catch methods—reports of fishing vessels, gear and other technical matters.

(3) Processing and utilization.

The article further stated that the Americans wanted to add a fourth point:

(4) Study of marketing-cooperation between the two nations, looking to expansion of the tuna market, new potential purchasers of tuna, development of new product sales promotion and public relations in the existing market.

The Japanese have hesitated to add this point to the official agenda, but the probability is that it will be accepted.

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problems; and the more complete the discussion, the greater the possible benefits.

Government participation in the discussions is considered by many a most significant and helpful thing. It makes the Government—morally, if not legally—a party to any principles laid down between the Japanese and U.S. industries; and it may also act as a brake on any restrictive or monopolistic ideas that either side may have.

Many spokesmen seem to feel that these discussions will help to convince our own Government that the U.S. tuna fishing industry is worth saving, and that to save it, action must be taken soon.

Although people in the Southern California industry generally think that import controls will be discussed in some form or other (but certainly not officially), most of the industry advisors who will go to Tokyo place considerable importance on the long-range points to be discussed.

Bigger Market, Better Times

There is great interest in any principles or projects that may be developed for expanding the world market for tuna. Some delegates feel that the pressure on the U. S. market can be eased by developing markets in other parts of the world. Italy, Germany, Belgium, the United Kingdom and other nations have become good customers for canned tuna, and proper promotion could make them better. The U. S., after all, is not the only market for world tuna.

There is strong feeling that the exchange of information on conservation is important. More and more is becoming known about the stocks of tuna of various species, and if research can be correlated between the nations, steps might be taken for peaceful development and sharing of the world stocks of tuna.

Many of the industry advisors feel sincerely that a frank discussion will create an atmosphere of mutual trust and confidence that will make it easier now and forever to solve all problems. And this means trust and confidence not only between U. S. and Japanese, but among the various branches of the U. S. industry itself.

No One Wants Exclusion

No responsible spokesman for any segment of the U. S. industry wants Japanese frozen tuna excluded from the U. S. market. There is total agreement that Japanese tuna is needed and wanted by the U. S. canners. But there is also virtually unanimous agreement now that U. S. tuna fishermen are entitled to a fair share of the United States market. One spokesman even went so far as to say that at the present time, with the U. S. tuna fleet shrunk to its present size, and the market expanded to more than 14,000,000 cases in 1958, U. S. demands might be scaled down to a smaller p centage of a bigger market for few boats.

Another spokesman expressed t view that everyone in the U. S. indu try is willing and anxious to allo the Japanese fishermen a fair sha of the U. S. market, but not an u reasonable share.

Past Points Way to Future

There was some feeling that a d cussion of the past troubles and su cesses of the U. S. tuna industry mig prove helpful in charting a course in the future.

It was pointed out—in a very frien ly manner—that the San Diego clipp fleet was built on the basis of tu prices that turned out later to be u realistically high, but that the bo owners, having agreed wih canners f high prices, insisted on holding t price line in spite of cheaper import fish. This, it was said, had disastro results on many canners, and serio results to all.

It was also said that if U. S. canne had refrained from buying low-pric imported fish and stuck to high-pric U. S.-caught fish, the foreign canne could have swamped the U. S. wi canned tuna despite the 35% valorem duty now levied on import canned fish above a maximum quo This would have meant disaster n only for U. S. canners but for U. fishermen as well.

While the general United States a titude towards the meeting is one cautious optimism and hope, there also the dark view, which holds th the U. S. tuna fleets are doomed wit out hope, and that the only thing be gained from the meeting is to p into the public record the fact that t U. S. Government has "sacrifice the boats to the policy of internation free enterprise.

If now the Government wants revive the U. S. tuna fleet, this vie holds, the Government is going to ha to protect it in some way—possib through import quotas on frozen tun

To support the view that the U. tuna fleet is "wrecked", it is point out that as of today about 65 tu clippers, including cannery - affiliat vessels, are fishing, and of these ma are tying up at the end of current trip

Success Or Else

Strange as it seems, many peop in the Southern California indust apparently hope that the Tokyo tal will result somehow in the very volu tary controls that the State Depa ment says must not be discussed.

The view was heard that volunta controls on the part of Japanese e porters would be preferable to str controls by means of import quot

or tariff restrictions, because voluntary controls would be more flexible, more quickly adaptable to changing market conditions and more responsive to the real conditions of the market at any given moment.

The alternative?

Few spokesmen talk about alternatives. Most seem to hope so strongly for success from the coming talks that they do not say what should or could be done if no results are forthcoming.

The only alternative *Pacific Fisherman* heard mentioned was a renewed campaign in Congress for quota or tariff control of imports. This effort, it was said, should be so powerful, so loud and so sustained that Government would respond with the needed action.

It is pointed out that several score other American industries besides tuna fishing are in trouble from imports. This list, it is said, may grow to as many as 100 industries or more, and if common cause were made, their just pleas could not fail to succeed.

The Other Side

The Japanese attitude toward the coming talks, naturally enough, has ranged from coy to difficult, and at this writing it can still be said that the Japanese authorities are unwilling participants, taking part in the meeting only at the urgent plea of the United States side.

When the subject of the meeting was broached to the Japanese foreign office, the first result was the formation of the Export Tuna Canners' Association, which discussed export controls and coordination of the canning, freezing and fishing branches of the Japanese tuna industry.

When the formal proposals came from the U. S. to the Japanese government, the government countered by taking up the agenda point by point and showing how it was either unnecessary, inadvisable or impossible to discuss each point. It was also suggested that an international meeting, if held at all, might better be held between industry representatives without Government participation.

These objections, however, were not too strongly put forward, for Japanese authorities showed a desire to be agreeable; and the meeting was scheduled for about September 30, 1959.

At this writing, according to direct advices to *Pacific Fisherman* from Tokyo, it is not perfectly clear that the Japanese authorities have exactly the same ideas as the U. S. group on the meeting—just what subjects are to be covered, how deeply the discussions are to go, and how long a period the meetings are to cover.

Altogether this is to be a most unusual type of international meeting, without precedent, but promising a great deal. If it is possible to establish a precedent of industry representatives, with Government participation, getting together to solve mutual problems, the result could be a new type of international business negotiations, with far-reaching possibilities — and possible dangers too, for that matter.

International North Pacific Fisheries Comm. Meets in Seattle

● November 2 is the big international fisheries date, in Seattle. At 9:30 a.m. on that day, the formal and public opening of plenary sessions of the International North Pacific Fisheries Commission will take place before an audience of at least 200 in the Olympic Bowl at the Olympic Hotel in Seattle. It will be the sixth annual gathering of this body, representing Canada, Japan and the United States.

Edward W. Allen, who is Chairman of the Commission this year, reports that a delegation of interested persons from Alaska as well as the other three Pacific States and British Columbia will be in attendance at the opening session; that several guest speakers are being brought for the occasion; that the importance of Alaska statehood will be emphasized; that a special luncheon will be given by the Seattle Chamber of Commerce to welcome the delegates of the three nations; and that local fishing industry interests will provide entertainment—In short, the plenary sessions, which will continue the remainder of the week in-camera, will open with an attractive program for everyone in the Pacific Fisheries.

Back of this morning meeting will lie three weeks of careful committee work, beginning October 12 at Vancouver, B. C. with a week-long study by the Commission subcommittee concerned with questions of the abstention problem on a purely scientific basis. The next two previous weeks, beginning October 19 at the Benjamin Franklin Hotel in Seattle, will be given to several other committee meetings:

● The large Committee on Biology and Research, principally concerned with salmon distribution and movements on the high seas, will analyze the progress of research in the North Pacific and study plans for future research, and will consider matters of oceanography in general and studies of King crab in the Eastern Bering Sea.

● The ad hoc Committee on Abstention will consider that question in relation to herring, halibut and salmon.

● The ad hoc Committee on the Protocol will study the problems involved in the location of the provisional dividing line for salmon fishing on the high seas.

● The Committee on Finance and Administration will work on the internal organization of the International Commission itself. Executive Director of the Secretariat for the Commission with headquarters at the University of British Columbia in Vancouver is Roy I. Jackson.

These committee meetings and the plenary sessions will be attended by a total of at least 100 delegates from the United States, Canada and Japan, led by these twelve Commissioners:

The U. S. Section: Edward W. Allen of Seattle, who is also Chairman of the Commission; Milton E. Brooding of San Francisco, Chairman of the American Section; Arne J. Suomela, Commissioner of Fisheries from Washington, D. C.; and John H. Clawson of Anchorage, Alaska.

The Canadian Section: George R. Clark, Commission Vice-Chairman and Deputy Minister of Fisheries, Ottawa; John M. Buchanan, Chairman of the Board and President of British Columbia Packers Ltd., Vancouver; James C. Cameron of Pender Harbor, B. C.; and Roger T. Hager, President

of Canadian Fishing Co. Ltd., Vancouver.

The Japanese Section: Iwao Fujita, Commission Secretary and Vice Chairman of the Fisheries Association of Japan; Haruki Mori, Director of American Affairs Bureau of the Foreign Ministry; Kenjiro Nishimura, newly appointed Director of Fisheries Agency; and Koichiro Kobayashi, Vice President of Nichiro Fisheries Co. Ltd. All four of these men are from Tokyo.

All twelve men bring with them a distinguished body of scientific and industry advisers, and behind the work they direct lies almost a decade of international treaty experience and five previous Commission meetings, rotated among the three nations. The lines of inquiry are clearly drawn from the volume of scientific information which has been gathered from the high seas and the laboratories to support these discussions, as they come full cycle for their second trip to Seattle.

. . . American Section Sees Abstention as Main Item

● The most important item for consideration at the annual meeting of the International North Pacific Fisheries Commission, Seattle, Nov. 2-7, is that of abstention by the Japanese from fishing stocks of salmon, halibut, and herring of North American origin, as provided for in the treaty between Japan, the United States, and Canada.

Qualification of these species for continued abstention by Japan is subject to annual review, according to Milton E. Brooding, California Packing Corp., San Francisco, chairman of the American Section which met in Seattle Sept. 3-4.

The meeting last month in Seattle of Mr. Brooding, the three other American commissioners, John H. Clawson, Anchorage, Alaska; Edward W. Allen, Seattle; and Arne J. Suomela, Washington, D. C.; members of the advisory committee, advisors from the U. S. Departments of State and Interior, biologists and researchers, reviewed this summer's research on salmon, halibut, herring and crab, and discussed policy questions in preparation for the annual meeting of the full commission in November.

● Involved in this deliberation was the problem resulting from the intermingling of stocks of Asian and North American origin and the method of handling this situation.

Mr. Brooding stated that research information generally confirms that previously developed by U. S. biologists as to distribution of salmon.

Commercial fishing boats under charter to the Fisheries Research Institute of the University of Washington, and the U.S. Fish & Wildlife Service, including the research vessel *John N. Cobb* conducted extensive tagging and sampling operations north and south of the Aleutian chain as far west as East Longitude 170.

It confirms a vast area of intermingling of salmon of American and Asiatic origins.

Salmon research conducted by the U.S. Fish & Wildlife Service, and the Fisheries Research Institute, cover a broad area of study encompassing high seas distribution, tagging, oceanography, morphology, scale studies, serology, ocean growth and mortality.

This research is all directed toward learning the oceanic location of North American salmon, and the area and extent of intermingling of North American and Asiatic stocks, and the environmental factors affecting their distribution.

Quotes from World Wide Sardine Conference at Rome, Italy

(*By PF Correspondent*)

After several years of planning and preparation, a conference on the biology of sardines and related species convened in Rome on September 14, with representatives of 26 nations in attendance. The meeting was called to order by Donald L. McKernan, Director of the United States Bureau of Commercial Fisheries and Chairman of the World Wide Sardine Conference.

Dr. F. W. Parker, Assistant Director General, Technical Department, F. A. O., gave welcoming remarks pointing out that it is the duty of F.A.O. to implement an international meeting when the need is apparent.

Dr. D. B. Finn, Director, Fisheries Division, F.A.O., in his opening address, made several comments on the importance of this study:

"This meeting is closely concerned with one of our major activities, that relating to the surveying of living aquatic resources.". . . "The need for research and investigation and for the information that can come from such work, is nowhere more urgent than in the case of sardines and related species. There is no need to tell you of the problem, for example, associated with fluctuations in sardine catches, which not only upset the supply situation as far as world markets are concerned, but also lead to great hardships for the fisherman and the fishing industries which depend on these catches."

". . . world sardine catch . . . represents about one quarter of the total world catch of fish, crustaceans and mollusks.". . . "Fishery biologists in all parts of the world have been studying this sardine problem for many years, but despite the energy and ingenuity of their researches, the problems before them have resisted solution."

In the first three days of the meeting at this writing several interesting controversies and conclusions came up of interest to sardine fishermen and canners of the Pacific Coast, for example the question of whether availability of fish or stock size accounts for the fluctuations in the catch.

Countries represented at the conference are Ghana, U.S.A., Chile, Italy, Turkey, Israel, United Kingdom, Norway, United Arab Republic, U.S.S.R., Spain, Union of South Africa, Netherlands, Japan, France, Germany, Australia, Morocco, Venezuela, South West Africa, Nigeria, Yugoslavia, Canada, Philippines, Portugal and Belgium.

The American biologists in attendance include Donald McKernan, John C. Marr and Elbert Ahlstrom of the U. S. Bureau of Fisheries, John Radovich, California Dept. of Fish & Game, and Garth Murphy, Coordinator, Marine Research Committee of California.

Harold Cary Appointed An Advisor to Interior

Harold F. Cary, former manager American Tunaboat Assn., in August was appointed a member of the congressionally-created American Fisheries Advisory Committee, primary function of which is to advise the Secretary of the Interior with respect to employment of the Saltonstall-Kennedy Funds.

The committee meets Oct. 7-9 at Old Point Comfort, Va.

B. C. Salmon Picture Bright

Dispite 1959's Anxieties

● Over-all salmon production in British Columbia this year is nothing to cheer about, and after last season's fabulous harvest the 1959 pack figures seem unimpressive. The industry will probably feel fortunate if the total exceeds 1,000,000 cases. It could well have been 1,400,000 cases if there had been no fishermen's strike at the outset of the season.

Considering all the circumstances — the tieup, the conservative predictions of the biologists and the knowledge that this wasn't scheduled to be a banner year anyway— fishermen and operators could regard the salmon season with satisfaction. Actually, the Sockeye and Pink runs turned out to be better than most people had expected.

Looking to the future, B. C.'s salmon industry had reason for elation over some features of the past summer's run and catch. It is estimated, for instance, that the catch of Fraser River Sockeye this year will total some 3,370,000 fish—the best for the cycle since 1903 by a wide margin.

Estimated catch of these Fraser River Sockeyes is 1,820,000 for U.S. fishermen and 1,550,000 for Canadians, and the fishing strike is alone responsible for whatever discrepancy there may be when the final statistics are tabulated. Back in 1903, the Americans caught 1,911,000 fish and the Canadians 2,341,000 for a total of 4,252,000. There have been only three cycle years since then when the total international catch exceeded 2,000,000 fish, so that this year's estimated total of 3,370,000 (compared with the previous cycle year's 2,115,000) is exceedingly gratifying, and it provides additional evidence of the success of the long-time program carried out by the International Pacific Salmon Fisheries Commission.

● While a good sea survival was predicted last winter, it was greater than expected. It is significant that the sea survival of Chilko migrants, for instance, was over 20% this season, whereas in 1955 it was about 5%. Incidentally, the sea survival in 1955, 1956 and 1957 was at record low levels, although it was excellent in 1958.

Individual runs were about five days off schedule this year, being later than normal and extending over a longer than usual period. This is a similar but modified type of migration to last year when the runs of Sockeye were ten days late and for a while caused considerable consternation among fishermen.

● Escapement due to the Canadian strike was excessive to the Chilko spawning area, but not to others in the Fraser system. An early, but not confirmed, estimate of the escapement is about 500,000 to 600,000 Sockeyes, compared with 128,000 in the last cycle year.

Here are other unconfirmed escapement estimates:

	1955	1959
Early Stuart	2,170	2,900
Seymour River	9,500	42,000
Raft River	5,364	15-20,000
Gates Creek	86	800
Barriere River	103	200
Taseko Lake	4,400	12,000

Other escapements had not arrived in volume when this was written (mid-September) except for Pitt River, where it was impossible to make an accurate estimate, but tagging enumeration indicated that the total escapement would be good. A volume of Sockeye remained in the Gulf of Georgia normally delaying in their migration to the spawning grounds of Adams River and other below-Hell's Gate streams such as Cultus Lake, Harrison River and Weaver Creek.

● Now let's turn to Pinks; the Fraser River Pink salmon run was little if any better than the poor run in the brood year 1957. It was better than had been predicted by the Commission, but not in complete conflict with the Commission's anticipations. The total estimated season's catch will be 2,500,000 fish for the U.S. and 2,500,000 for Canada, for a total of about 5,000,000 Pinks, compared with 5,412,000 in the brood year and 8,815,000 in 1955.

The more-than-expected catch of Pinks is believed to have been due to almost perfect spawning and incubation conditions for a well balanced escapement in the brood year.

The all-time record troll catch of Pinks by U. S. and Canadian trollers off the Washington coast and Vancouver Island failed to indicate the poor run and led to over-optimism on the part of the industry as to the actual size of the 1959 Pink salmon operation. For a brief period, the catches seemed almost sensational off the west coast, but weather and other conditions interrupted the operation. In addition, new lures and high prices led trollers to actually fish for Pinks instead of releasing them or avoiding the area where schools were feeding.

Although it is still too early to make a reliable forecast on the size of the Pink salmon escapement, it is expected that the escapement to both the early and late spawning grounds will exceed that of the brood year.

The Commission is hopeful that the early escapement to the main Fraser between Chilliwack and Hope and to the Thompson River above Hell's Gate will be increased substantially. It is in the spawning potential of this area that the hope for increased Pink runs can be realized.

● With a good and well balanced escapement for the early and late runs a sizeable increase in the run can be expected in 1961 because unfavorable marine environment for survival will probably disappear in time to provide for the increase. With a return to normal in the size of the 1961 Pink run combined with the substantial Sockeye run predicted for 1961, fishermen should find that year a profitable one.

It is too early to make predictions on the 1960 run, but estimates will be made in December at the scheduled open meeting of the Commission with the industry. There will be no Pinks or late running Sockeye in any volume and the run will be predominantly destined for the Chilko. There will be no early Sockeye in any volume (before July 20).

Japanese Fishery Director Changes

(*PF Saff Report*)

On September 1 the Japanese government announced that Fishery Agency Director Hideo Okuhara resigned the post; that Vice Director Kenjiro Nishimura was promoted to his post as Director; and that Yashuhiko Takahashi of the same agency was promoted to Vice Director.

Panorama of Paita across the top of these pages shows the ancient port as it appeared to the crew of the **Sun Jason** when they reached their new base of operations in Peru. Note the tuna clipper and freighter at the barges on the left and the lighters in the roadstead. The **Fripsa** plant is the light building on the left.

Article No. 5, Latin American Series

PAITA — Peru's Ancient Port Finds New Prosperity in Fisheries

● Paita is one of the most northerly of Peru's several fishing ports along the country's 1,400-mile coast. With a cannery and freezer in the town itself, and a freezing plant, fresh-fish handling station, fish-meal factory and whaling installation at Tierra Colorada, a "suburb" seven miles away, the port is fast gaining new importance in the fisheries of Peru.

Here Westgate-California of San Diego (Breast-O'-Chicken Tuna) is prominently in the picture with two subsidiary canning and freezing firms —Frigorificos Paita, SA, and Norpac at Tierra Colorada.

In April, 1959, Frigorificos Paita (called Fripsa for short) added the 132′ purse seiner *Sun Jason* to its fleet. The *Jason,* a converted tuna clipper, is the biggest vessel of its type now based in a South American port, and the second big seiner (after the 112′ *Sun King*) to adopt a home base in Peru.

Under the general management of John Day, Fripsa has within the past two years doubled its freezing capacity in Paita by building its own new direct expansion ammonia plate freezing equipment.

Canning lines also have been refined and improved by modernizing equipment. The result, Mr. Day says, amounts to adding about half a line in capacity.

● One notable innovation at Fripsa is the invention of a new way to prepare and ship ready-to-can tuna to the mother cannery at San Diego. A Carruthers Pak-Shaper has been modified to produce 20-inch-long cylinders of fish, which are encased in plastic tubes and sharp-frozen for shipment to San Diego. There the cylinders are cut to the right size and put into cans.

Last year saw another important forward step for Fripsa when National Marine Terminal Inc., its affiliated shipping firm, acquired the *Westgate,* a refrigerated freighter with a capacity of around 1,800 tons which now plies regularly between Paita, San Diego, and way points. The *Westgate* carries cargoes of Peru-caught frozen fish to the Westgate cannery.

Meal Plant at Red Rock

At Tierra Colorada (which, freely translated, means Red Rock) Fripsa has its meal factory, freezing facility and fresh-fish handling station. Tierra Colorada is the next cove south of Paita. You reach it either by sailing around the point in a commercial launch or by driving across the mesa over a desert road with some rough narrow sections and sharp curves in it.

This meal plant is a remarkable construction job. It was purchased in California, where it had been used to process sardines, and shipped to Paita piece by piece, every part numbered and keyed so it could be properly reassembled like a jig-saw puzzle.

Transporting the heavy pieces of equipment from Paita, where it was landed, to Tierra Colorada over the desert road was quite a task. The road which is no boulevard even for light vehicles, was a real challenge to drivers of heavy trucks. To put it mildly there was considerable difficulty in

(Continued on page 12)

Steel Pier at Tierra Colorado permits fishing vessels to discharge comfortably, but cannot accommodate craft. Pumped fish is delivered ashore by flume.

Paita, Centro de Diversas Industrias Pesqueras

En Paita, Perú, y su vecino lugar Tierra Colorada, se encuentran actualmente una planta empacadora, dos frigoríficos, fábrica ballenera, facilidad para pescado fresco y elaboración de harina de pescado.

Todas dichas industrias van progresando y desarrollando. En la empacadora de la empresa Frigoríficos Paita, SA, se han hecho mejoras y ampliaciones que han aumentado en efecto la capacidad productiva de la planta como si se hubiera agregado la mitad de una nueva linea de empaque. La capacidad de la congeladora se ha doblado dentro de dos años.

A la flota pesquera de Paita se ha agregado el barco *Sun Jason,* hoy día el barco pescador más grande de toda la República. El vapor *Westgate,* que lleva cerca de 1800 toneladas de pescado congelado, rinde servicio de carga de Paita a San Diego, California, sede de la empresa Westgate-California, ligada con la Fripsa de Paita.

En Paita se ha desarrollado un nuevo método de enviar atún a California, por medio de cilindros de atún de 20 pulgadas de largo, que se encierran en envases plásticos y se envían congelados a la empacadora de San Diego. Los cilindros de atún son de diámetro exacto para caber en las latas, y en San Diego se cortan al debido largo y luego se envasan con un mínimo de trabajo y gasto.

La construcción de la fábrica de harina de pescado en Tierra Colorada fue obra notable. La planta entera, inclusive el cocedor, prensas, molino, etc., se compró in toto en California, donde había funcionado como fábrica de harina de sardinas.

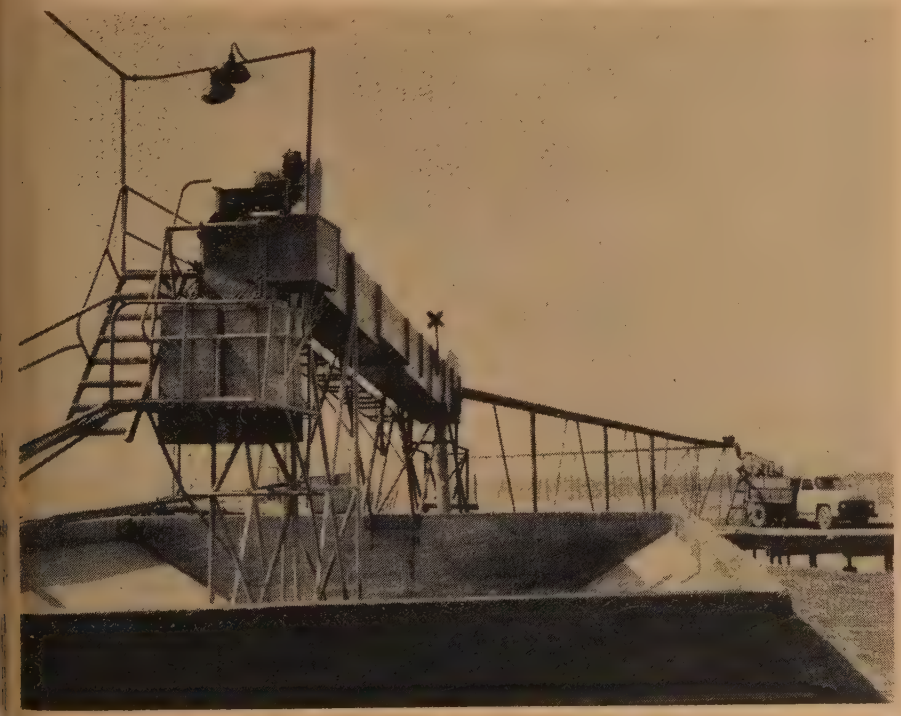
Todas las piezas de acero, equipos, etc., se numeraron y desarmada la fábrica se envió a Paita por mar y a Tierra Colorada por la carretera que atraviesa unos diez kilómetros de montañoso y desparejo terreno.

Street in Paita, looking past the Frigerificos Paita office building, cold storage engineroom and cannery in the distance.

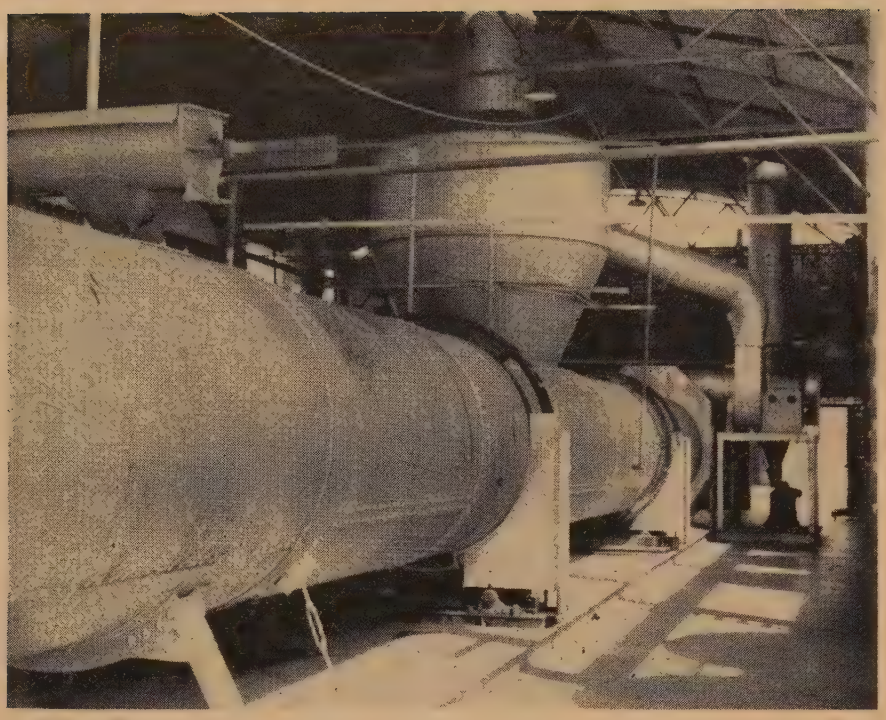
En Tierra Colorada se edificó el nuevo edificio con cimientos de concreto, y allí se armó y se colocó la fábrica entera. Tan acertado fue el trabajo de los ingenieros y operarios encabezados por Sr. John Day, gerente de la Fripsa, y Sr. Hugh Latimer, jefe de la fábrica, que la obra resultó en efecto perfecta y hoy día produce harina a razón de diez toneladas diarias.

Junto con la congeladora de Tierra Colorada, la empresa Norpac rinde servico de congelación para los pescadores de pescado fresco. Gracias al dicho servicio, los pescadores pueden conservar el pescado de un dia a otro y así no se ven precisados a vender a cualquier precio toda la pesca de cada día.

Debido al desarrollo de las industrias pesqueras, el puerto de Paita está recobrando algo de su grandeza y prosperidad de antaño, cuando fué uno de los principales puertos del Perú.



Fresh Fish By-Pass from the Fripsa flume at Red Rock permits fish delivered by trawlers to be drawn off into trucks. Anchovies for fish meal continue to this weighing hopper and reduction plant pit.



Tierra Colorado, of "Red Rock", is the location of the Fripsa reduction plant near Paita. Here is the modern Enterprise dryer, grinder and cyclone in a modern steel frame building with an asbestos cement roof against the sun.

volved in trucking heavy steel segments to Red Rock in five-ton trucks.

While the equipment was being shipped (including a steel roof truss) a foundation for the building was being laid on the site. Although planned 3,500 miles apart, the building and the foundation fitted almost perfectly when the two were put together.

As it now stands, the building has a solid concrete foundation on which a concrete-block wall rises about three feet. Upper walls are built of studs of extremely hard native wood, and walls of "estera," woven native cane. The vaulted roof covering is of "eternite," corrugated asbestos cement material widely used in these lands of tropic heat. The woven cane grass construction is also widely used, and is entirely adequate for coastal Peru with its warm, rainless climate.

Transplanted Plant

● Boats at Red Rock unload at the end of a new pier that extends several hundred feet into the shallow waters of the broad bay. Here they deliver fresh fish as well as fish for processing into meal. A long metal flume moves fish from the pier end to the processing plant and the freezing station on shore. Near the shore end of the pier is a gate in the flume, through which fish for the fresh trade can be diverted to trucks on the pier.

Processing fish pass over a dewatering flume to a concrete receiving bin from which they are moved to the cookers by screw conveyor.

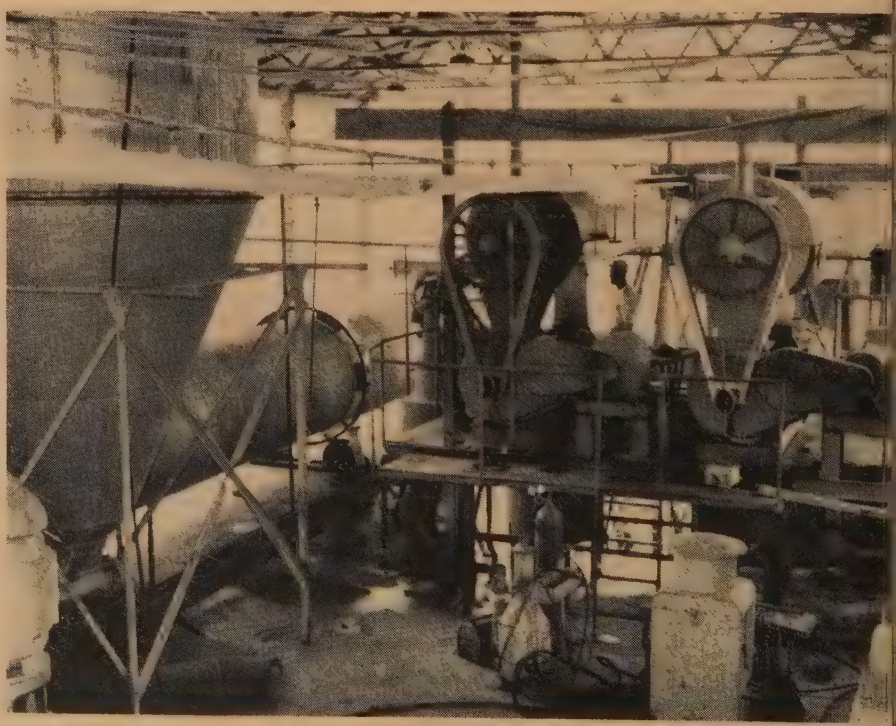
The meal dryers, cookers, presses, boilers and hammer mills are all products of Enterprise Foundry Engine & Machinery Co., San Francisco, Calif. The dryer tunnel is 69 ft. long, oil-fired. The plant is almost entirely mechanized, the material moving by automatic conveyor from one unit to the next. At the end of the process, a cyclone is used to recover the "fines," which are settled out of the hot-air stream that has passed through the dryer.

In spite of all the difficulties encountered, Fripsa has been able to build a modern, efficient meal plant, handling fish at the rate of about 10 tons an hour. Completed in July, 1957, it operates under the immediate supervision of Hugh Latimer, director of the Tierra Colorada operations for Fripsa. Fripsa's general manager, John Day, has headquarters in Lima but spends a great deal of time at Paita—so much time, in fact, that a home is maintained for him at Red Rock.

Cold Storage Service

● As an incidental to the freezing plant, Norpac offers fresh-fish fishermen a service that has proved very helpful. It offers cold storage space for fresh fish not sold immediately off the boats. Thus fish can be held over for next-day sale, and fishermen are not forced to sell at distress prices just to get rid of them. This has helped fishermen to level off supply with demand and maintain better prices even on days when supply exceeds demand. For storage, fishermen pay a percentage of the gross selling price of the fish.

Tierra Colorada fishermen sell to buyers from all over northern Peru who drive their iced trucks on the pier to make their purchases. Even from as far away as Lima, whose own port of Callao is only seven miles away, fish trucks have been known to jour-



Modern machinery marks the Fripsa reduction plant at Red Rock, Peru. All Enterprise, the equipment had to be hauled across the bitter desert to the equally bitter shore where it contributes today to Peru's growing fishery prosperity.

ney several hundred miles to Tierra Colorada on occasion.

According to Mr. Latimer, about 10 tons of fish pass over the Red Rock pier, on the average day. The fishing fleet now consists of six to eight good-sized draggers, all owned and manned by Peruvian fishermen, who go out early in the morning and return in the evening of the same day with their catches. They use trawl dragger nets and catch a wide variety of bottom fish, all of very good quality.

Paita itself is an old community, and the recent prosperity of Peru's fishing industries is reviving its ancient prosperity and importance. Before the building of the highway that now crosses all of Peru from north to south, most of northern Peru's commerce moved through the port of Paita.

But the highway opened communications between northern Peru and the fine port of Callao, and it became more practical to unload ocean freight at Callao and truck it to the north. Paita, losing much of its commerce, shrank in size and importance. The provincial capital was moved to Piura, about 30 miles inland, where it still remains.

Now, with the development of the fisheries, Paita is getting back some of its activity and population. A good macadam road joins Paita to Piura, from where there is first-class highway, and air service besides, to all of Peru.

Harold Cary Joins Van Camp Sea Food Co.

Van Camp Sea Food Co. of Long Beach, Calif., last month announced that Harold Cary, former general manager of the American Tunaboat Assn. and one of the best-known figures in the fishing industry of the U.S., has joined the world-wide canning firm as assistant to the president, Gilbert C. Van Camp Jr.

Mr. Cary will work directly under Mr. Van Camp, mostly on special assignments. One of his first duties will be to go to Tokyo with Glenn Copeland of the Van Camp organizations, for the inter-Governmental tuna talks between the U.S. and Japan.

A notable expert in the fields of management, legislation and accounting Mr. Cary headed the ATA for 11 years. He has been close to the fishing and shipbuilding industries in Southern California for a quarter of a century. Previous to his duty with the tunaboat association he was for six years general manager of Lynch Shipbuilding Co., San Diego. Previous to that he served the County of San Diego in charge of accounting procedures and budgets, and Campbell Machine Works as cost accountant. During the past several years he has carried the chief responsibility of the tunaboat owners' organization in legislation in Washington and in dealings with foreign governments on fishery matters.

In announcing Mr. Cary's connection with Van Camp, the canning firm's management expressed great satisfaction in adding a man of his attainments and experience to its high-level executive staff.

Sandoz Is Director at Hawaiian Pineapple

T. F. Sandoz, who is President of Columbia River Packers Association, Inc. has been elected to the Board of Directors of Hawaiian Pineapple Co., Ltd., rather than to the Board of Castle and Cooke, Ltd. as had been reported in the September issue of *Pacific Fisherman*.

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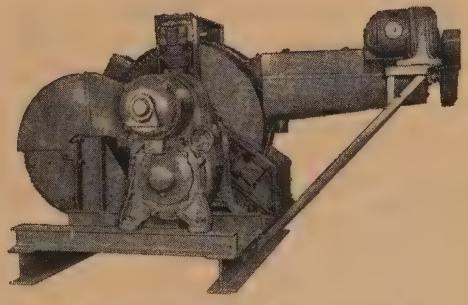

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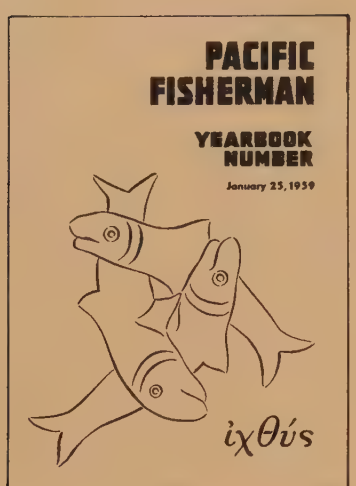

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PACIFIC Fisherman's NEWS

OCTOBER 1959

Sardine Season Gets Off to a Halting Start

● Central California's sardine season, scheduled to open Aug. 1, finally got off to a halting start Sept. 8, with Monterey's some 20 purse seiners finding schools of mixed fish in Monterey Bay and in nearby waters.

Price for fish landed at the cannery was finally settled at $35 per ton, as compared to $60 per ton at the start of last season, when fishermen had to pay trucking charges from Morro Bay-Avila.

Fish were in fair quantity but packers were loathe to operate at capacity, due to reported carry-over in southern California canneries, and the loss, for the most part, of export markets to South African and Japanese canned sardines.

Most central California canners seemed to feel that they needed $25 per ton sardines to make a profit.

● Some 1,889 tons of sardines had been landed in Monterey to Sept. 18, as compared to 10,900 at the same time last year. The main encouragement in the situation, was, however, that the fish seemed to be back in central California waters. Last year, most of the catch was taken from southern California waters and the fish were trucked in to Monterey.

The Monterey boats went out again Sept. 20 but no sardines were landed. There was only one and a half hours of darkness, and the sea was rough.

● Market observers stated that the California canned sardine market was confused. Ovals in tomato sauce were selling at $6.75-$7.00, and talls around $5. Demand was mild with some export interest. Buyers were waiting to see what the southern California price for sardines would be. Canners were talking about $25-27.50, but as of Sept. 21 no price had been settled on.

Japan Says 1959 Ocean Fishing Forecasts Big Catch Next Year

(PF Staff Report.)

● "Big year type" of fishing was encountered by the Japanese high seas fleet in the Aleutian area during the 1959 season, according to the official analysis of the data released by the Fishery Agency.

In translation, the Agency's analysis says:

"The 1959 Aleutian operation of 16 motherships and 460 catcher boats found water temperature a little higher than last year. There was little interruption of fishing, as the weather conditions generally were favorable. The decreased quota of 70,834 metric tons was achieved much earlier than in 1958.

"Fishing conditions as a whole were of the big-year type, proving-out the position argued by the Japanese representatives at the third meeting of the Northwestern Pacific High Seas Fisheries Commission. (U. S. S. R. and Japan).

"As for fishing results by age classes:

"Four-year fish, which are the main objective of fishing, were abundant over all the fishing area, as had been forecast by the Japanese representatives. Further, considerable numbers of 3-year-old fish were observed, supporting the expectation of a good catch next year."

Ray Hamilton Heads Albacore Cooperative

Ray Hamilton, skipper of *El Gralo,* is the new President of the California Commercial Fishermen's Assn., Albacore-producers' organization headquartered in San Pedro, Calif.

Jim Brandenburg of the *Aquarius* is vice-president; and Russell Farnell of the *Dorothy R.* is secretary-treasurer.

Directors serving for the present year are Gus Johannson, *Belle J* II; Bill Farrar, *Showboat;* Harry Larsen, *Kay D;* Warren Beadle, *Dora Ann;* Earl Easton, *Lady Lou;* Frank Cheek, *Sharkfin;* Wally Hughes, *Eva;* and Jay Scholle, *Argonaut.*

Pete Repovich is manager and Dorothy Farnell assistant secretary.

As a help in consolidating the albacore men's group by promoting social and other affairs, the association has the American Fishermen's Wives Auxiliary, made up of wives of members. Current officers :

Dorothy Farnell, *Dorothy R.,* president; Elva Todd, *Minnie Belle,* first vice-president; Betty Johnson, *Happy III,* second vice; Pauline Hughes, *Eva,* recording secretary; Connie Larsen, *Shirley H,* corresponding secretary; and Helen Walsh, *Kitrie,* treasurer.

Besides acting in the social sphere, the ladies have been actively pushing the association's own brand of canned albacore, American Fishermen's Albacore, conducting numerous demonstrations in supermarkets, building up a growing mail-order business and manning booths at county fairs.

Southern California Domestic Tuna Deliveries

Cumulative totals for 1959 through Sept. 12, in tons, as reported by U. S. Market News Service

	Albacore	Bluefin	Skipjack	Yellowfin	Bonito, etc.	Total
Clippers and Albacore Fleet	9,753	16	37,408	22,304	3	69,484
Purse Seiners		7,013	8,321	21,713	414	37,461
Total 1959 through Sept. 12	9,753	7,029	45,729	44,017	417	106,945
Total 1958	10,118	13,688	43,379	54,315	2,020	113,402
Total 1957	11,662	9,159	31,842	56,965	71	98,037

Pietro Bruno Dies

Pietro Bruno, 76, retired Pittsburg, Calif., fisherman died at the home of his son, Gus, well known in the Monterey fish business last month.

Mr. Bruno had made his home in Pittsburg for the past 62 years.

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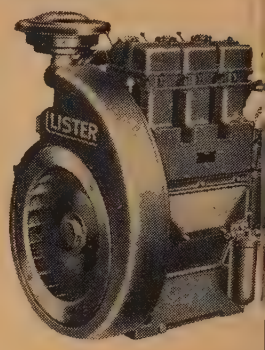

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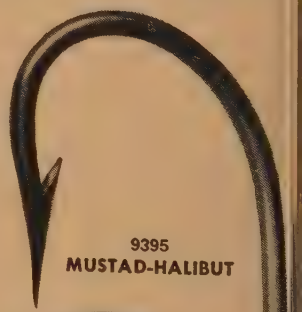
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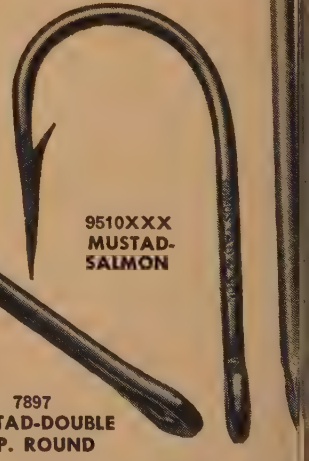
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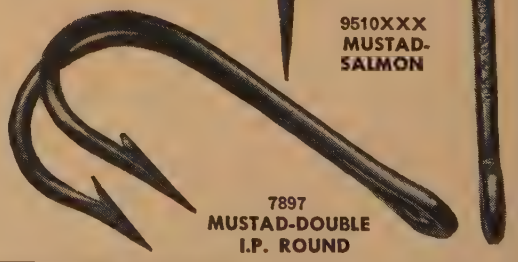
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OCTOBER 1959 Volume 57 Number 11

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Salvatore Tarantino, former owner of the San Francisco purse seiner **New St. Joseph,** has repowered his troller **Johnny I.** with a Tasco diesel engine purchased from Boicelli & Boss, Fishermen's Wharf, San Francisco.

American Firms Plan Chilean Fishery Work

The U.S. Fish & Wildlife Service has issued bulletins reporting the interest of two U.S. firms in developing the fisheries of Chile. An east coast by-products company plans with a Seattle firm (Marine Construction & Design Co.) to bring four modern fully-equipped fishing vessels to Chile soon.

The vessels will catch and sell fish on a commercial basis there to demonstrate advantages of modern equipment and methods. Boatbuilding and maintenance facilities are included in the plan; and fish reduction plants may be supported if results from demonstration fishing prove favorable and if that government adopts new regulations.

Numerous studies have been made on Chile's fisheries, indicating good resources whose potential is not yet fully realized. It is estimated that 100 boats are needed now to meet existing shortages in Chile and 100 additional boats will be needed to replace obsolete equipment there. Existing fish reduction plants are relatively modern, but operate far below capacity.

Chile is considering new fishing regulations to attract greater private investment in the industry through tax exemptions and other measures.

Alaska University Plans Marine and Fish Course

Fisheries and marine life institute for the University of Alaska is under consideration as result of the initiative of Dr. Ernest N. Patty, president of the university, who laid the project before a group of educators and scientists in Juneau last month.

Beside staff members of the Alaska Department of Fisheries and the U. S. Bureau of Commercial Fisheries, visiting scientists included Dr. William F. Royce of the Fisheries Research Institute, University of Washington; Dr. M. B. Schaefer, director of the Inter-American Tropical Tuna Commission; and Dr. Carl L. Hubbs, Scripps Oceanographic Institution.

It is anticipated that the Alaska institution will be established in or near Juneau, operating as a Southeast Alaska branch of the University at Fairbanks.

Fish-Finder Installed

Standard Fisheries, Inc., San Francisco, has chartered the well known trawler *Dorothy Ann,* and Joe Piazza is skipper. The boat has been equipped with an Atlas-Werke Fish-finder, sold by Raytheon Mfg. Co., San Francisco, and installed at the yards of Anderson & Cristofani, San Francisco, where the *Dorothy Ann* was hauled out for a paint job.

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SINCE 1903

Locating Fish With Echo Sounder

A report on the White Line Recorder, the operation of the Echo Sounder, and Interpretation of the Echograms

By
RALPH EIDE,
Chief Engineer, Simonsen Radio A/S
Oslo, Norway

● Today the echo sounder is a common and well-known instrument in the fishing fleet. Most fishermen who have used the echo sounder for some years may feel they have no more to learn about its practical use; but echo sounding techniques are currently undergoing rapid and significant development, and the more precise and specialized the instrument is the more skill it requires in its user.

The Norwegian ichthyologist Oscar Sund was among the first to use an echo sounder in locating fish. As early as 1935, on board the research vessel *Johan Hjort*, he successfully charted the incidence of codfish in Lofoten by means of an echo sounder. Fig. 1 (from p. 91 in *The Lofoten Fisheries*, 1935) shows one of his historic echograms of the shoals of codfish at Holla.

Echo sounding instruments attained common use in fishing boats only after the last world war. The echo sounder has been chiefly used to locate shoals of fish at small depths or near the surface. It seems safe to say that up till now the echo sounder's potential usefulness as an aid in catching fish has been very far from fully realized. This is particularly true in the case of shoals at greater depths or of scattered shoals. We believe that the white line recorder marks a forward step in the development of a versatile and practicable echo sounder.

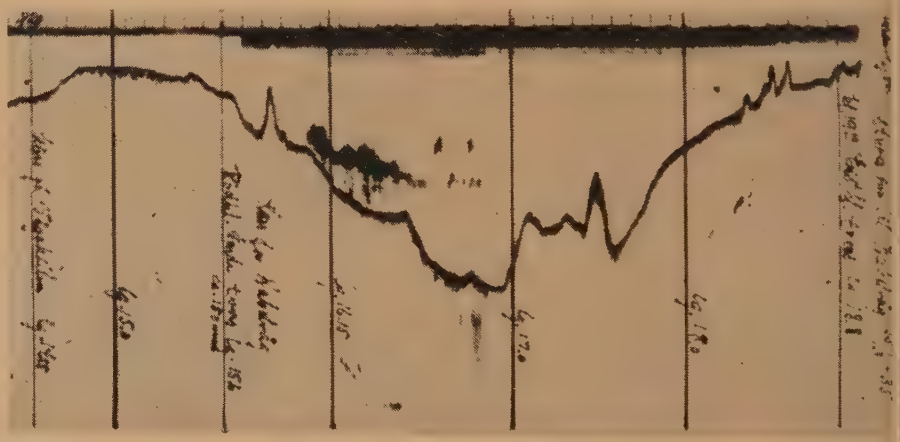

Figure 1—
Historic 1935 recording of Lofoten cod, made by Fishery Biologist Oscar Sund.

The SIMRAD white line recording echo sounder.

Until recently trawlers and long-liners mainly used the echo sounder to measure depths and to determine the nature of the sea-bed. Those who have had good echo sounders may also have recorded the existence of fish at great depths. However, it has been difficult to obtain conformity between the fish recorded and the catches. The reason is that until now it has been almost impossible to distinguish between fish and sea-bed when the fish are close to the sea-bed at great depths. Though various kinds of visual presentation or C.R.T. (cathode ray tube) equipment have been used with good results, it has been difficult to form a precise idea of the shoal. At the same time it is very tiring for the operator to watch a screen continuously. A paper recording echo sounder would therefore be preferable to C.R.T. presentation when traces are being obtained from fish on or near the bottom. Remarkable results have been achieved during the expeditions of the Norwegian research vessel *G. O. Sars*. These results are mainly due to:

1. An increase in the sensitivity of the echo sounder, achieved by higher amplification and a better concentration of the sound beam, and
2. A new method of presenting the information. The sea-bed contour is a thin dark line on the recording paper, immediately followed by a white line or a white shadow. Anything recorded above the dark line is something else

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Skipper and owner Anthony Cresci (right) points to oil pressure gauge which registers a steady 25 lb. psi at normal and high speeds and 15 lb. psi while idling, indicating excellent condition of Atlas Marine Diesel. Says Mr. Cresci: "We've used nothing but RPM DELO in this engine since it was new, 13 years ago. We feel DELO is the best possible oil to use in this type of service, and the condition of the engine proves we are right." The Cresci family has used Standard products aboard their fishing boats since 1919.

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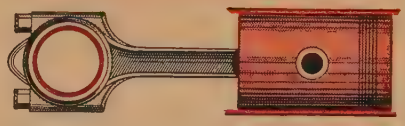

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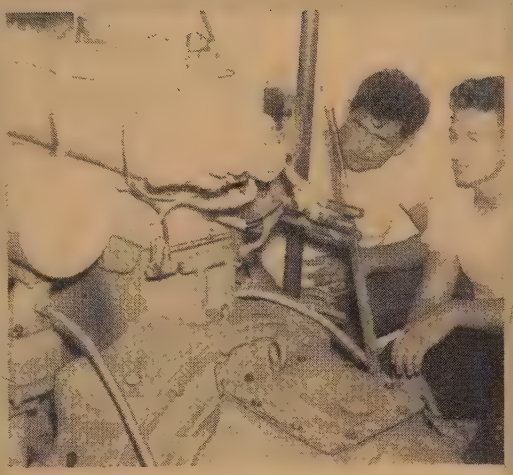

Captain Elmer W. Taylor, left, and Robert Bryant, Jr., look over the new Murphy Diesel in the engine room of the Chris-Alan.

MURPHY DIESEL

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says Captain Elmer Taylor

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than the sea-bed, for instance fish or vegetation. Below the white line, the usual black shading continues and the sea-bed can thus be determined in the usual way.

Sound Beam and Transmitter Pulse

● The sound transmitter, or transducer, as it is generally called, is the heart of the echo sounder. At the moment of transmission it functions as a megaphone, directing a beam of sound through the sea. The shape of the beam depends on the size of the transducer: the larger the transducer surface, the narrower the beam. In the white line recorder the transducer produces a beam that is wide athwartships and narrow alongships (see fig. 2). At the moment of reception, the transducer functions as a microphone, the sensitivity of which increases with its surface.

When the echo sounder is operating within its basic range, it emits a sound pulse every second. The sound may have a duration of, say one-thousandth of a second. The speed of sound in water is about 1,500 meters (4,921 feet) per second, and the sound pulse will therefore be approximately 1.5 meters (not quite 5 feet) long.

Each pulse contains a certain amount of sound energy. Near sea level the energy is concentrated within a relatively small area (marked "a" in fig. 2a). Further down, this energy is distributed over a wider area marked "b" in fig. 2a). This is the main reason why the echo from fish near the surface is stronger than the echo from fish in deep waters (cf. fig. 2b).

Thus, the area covered by the beam increases with depth. For example, 200 meters (656 feet) below sea level, the area is four times the size the area at 100 meters below. This is of importance in interpreting echograms.

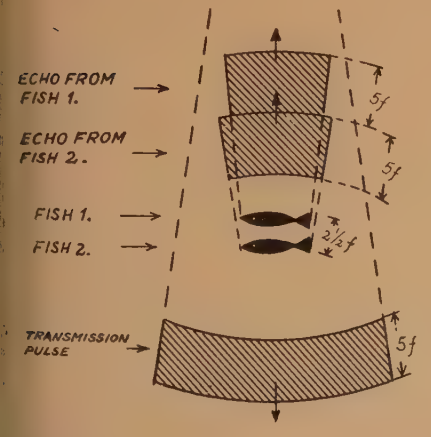


Figure 3—
Simplified diagram of echo from two fish that are separated by half the length of the sound pulse. The pulse has just passed below the fish and the echoes are on their way up, coalesced.

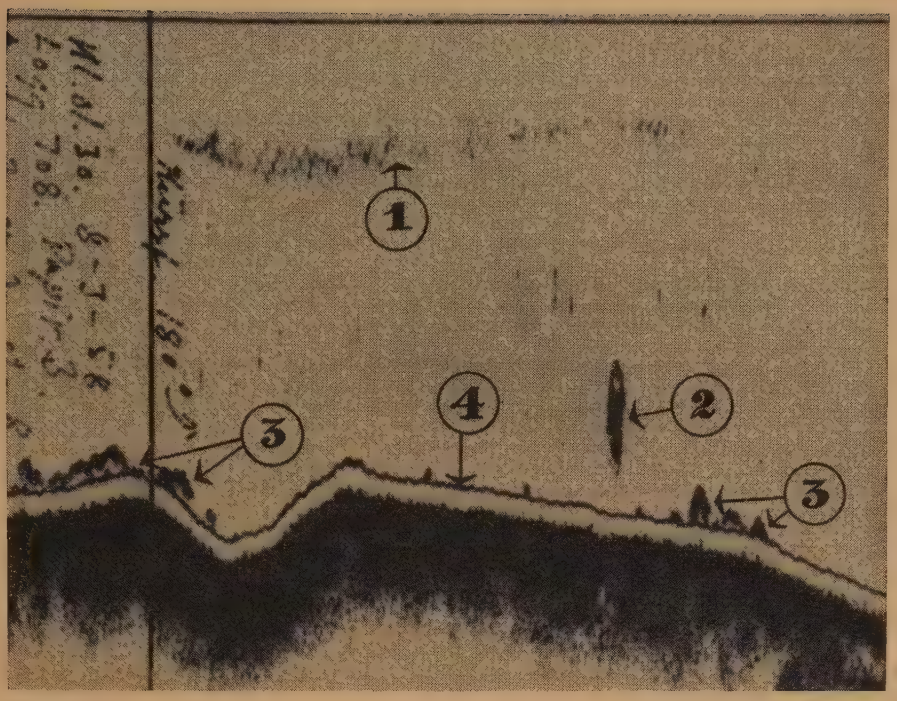
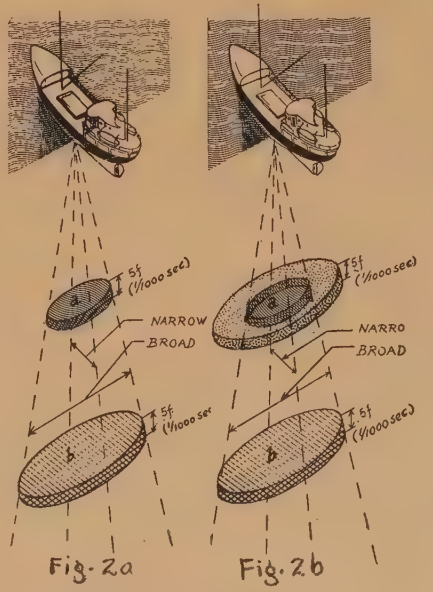


Figure 4—
Record of plankton and fish near bottom: (1) is plankton; (2) is a school of fish; (3) is fish close to the bottom; (4) is the sea bed contour.

Vertical Resolution

● It is important to know which details will be recorded. For instance, how close together vertically can two fish be before their echoes coalesce? The answer is determined by what is known as the vertical resolution of the echo sounder. In the case of sound pulses approximately 1.5 meters long, the echoes from fish closer together than half that distance will coalesce. Fig. 3 seeks to show this. Here the sound pulse has just passed two fish separated by the critical distance. Because of inertia in transducer, electronic apparatus, and recorder, this distance should be somewhat greater than half the length of the sound pulse if the two echoes are to be recorded separately. The faster the recording pen moves on the paper, the better are the chances for distinguishing among individual echoes. Detailed recordings, therefore, call for operation of the echo sounder at top speed. Because of the limitations imposed by vertical resolution, the echo from fish just above the bottom may coalesce with the echo from the bottom itself. But in the white line recorder the possibilities for indicating fish close to the bottom are increased, because the recorder utilizes the great difference in strength between the echo from the bottom and the echo from fish. The powerful bottom echo blocks the amplifier immediately after the echo has been recorded, so that the bottom is recorded as a thin dark line followed by a light field. The weaker fish echoes will ordinarily not cause this effect but will show up in the record as thicknesses above the thin bed line (cf. fig. 4a). At lesser depths and with unusually heavy shoals the fish echoes also will be blocked, but the sensitivity and the blocking controls can easily be adjusted in such a way that the fish echoes are recorded in the usual fash-



Figures 2a and 2b—
First diagrams sound beam and sound pulse; while concentration of sound beam in small field (a) and large field (b) is shown in Fig. 2a. Note the ratio of the two strengths.

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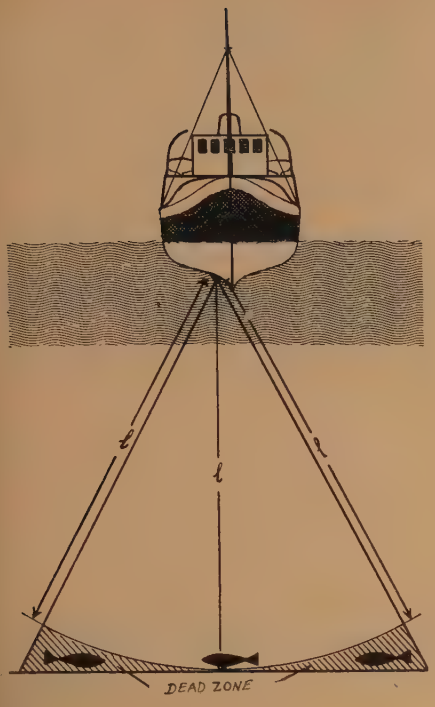

Figure 5—
Diagram of the "dead" field in the sound beam from the echo sounder. In reality the angle of the beam is not as wide as shown here.

ion while the bottom echo is being blocked.

"Dead" Field Near Sea Bed

Although the blocking of the bottom echo represents an improvement in recording technique, it does not allow recording of all the fish very close to the bottom. The reason is a "dead" field within the sound beam. The dead field is diagrammed in fig. 5. As the diagram shows, the echo from the nearest point on the sea bed reaches the recorder before the echo from fish in the dead field. Thus, in the echogram the echo from the bottom will conceal the echo from fish in the dead field. When the sea bed is uneven and bumpy, the dead field area increases. With a level bottom about 200 meters (656 feet) below sea level, roughly half the fish within 2 meters (6½ feet) of the sea bed will not be recorded, even though they are reached by the sound beam. (This assumes that the fish are evenly distributed with the 2 meters distance from the sea bed).

In cases where the fish actually rests on the bottom, feeding, only an insignificant part of the total incidence is likely to be recorded. But a concentration of fish on the bottom has in practice proved relatively rare. In heavy shoals, even of fish that characteristically go near the bottom, like cod and haddock, a large portion of the shoal is normally at some distance above the bottom.

Recording at Different Speeds

The appearance of the echogram is to a large extent determined by the speed of the vessel. For instance, the echoes of single fish will show up as long lines when the vessel is not moving; (fig. 6a). At slow speed the lines

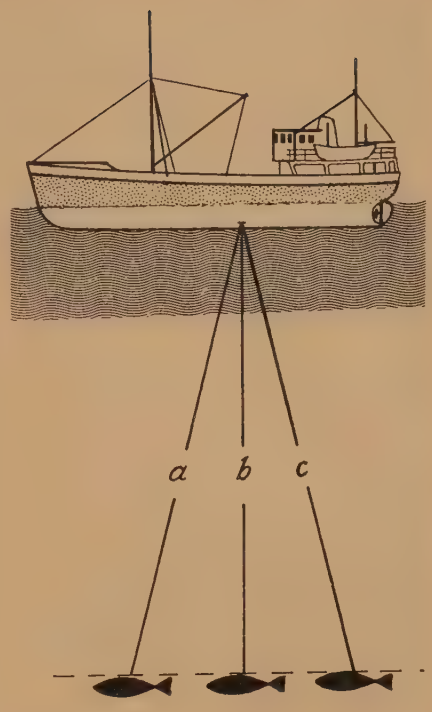

Figure 7—
One fish in three positions during passage of the echo beam. The oblique distances (a) and (c) are greater than vertical distance (b).

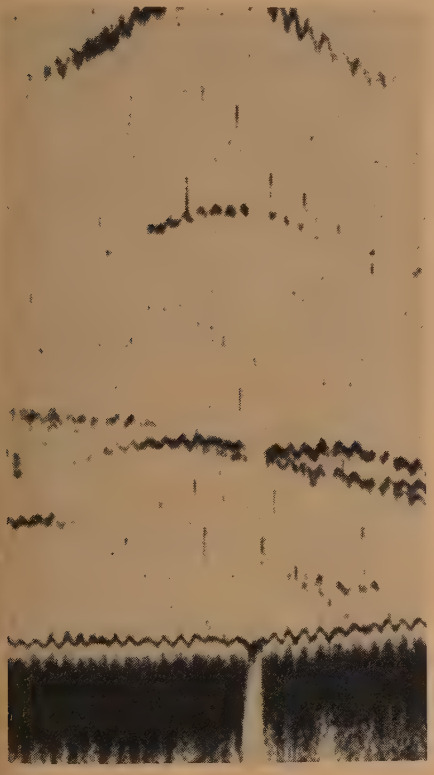

Figure 6a—
Records of single cod, vessel stationary.

Figure 6b—
Record of single cod with vessel at slow speed.

Figure 6c—
Records of single cod with vessel at full speed, about 10 knots.

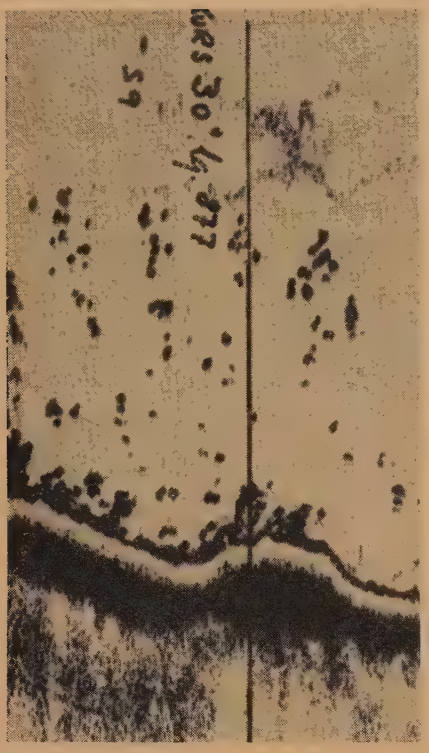

Figure 8a—
Scattered cod, mostly some distance up from the bottom.

Figure 8b—
Records of single cod, and foggy, irrelevant record.

Figure 8d
Irrelevant recording up from the bottom. Usual in northern waters.

shorten and curve (cf. fig. 6b), and at high speed they appear more like dots or points (cf. fig. 6c). The reason is that the number of echoes from a single fish varies at different speeds.

The curved lines that appear in recordings at low speed are typical of single fish recordings. They are due to the fact that the distance between fish and transducer is greater when the fish is near the edge of the beam than when it is in the middle. Fig. 7 shows this. At full speed the curvature is hardly noticeable, because so few echoes are recorded from each fish.

Interpreting the Echograms

The use of the White Line Recorder at high sensitivity in order to detect fish at great depths often results in "irrelevant" recordings. Experience shows that near the surface echoes are recorded from fish larvae, and other small organisms; and even at the sea bed in deep waters the echo sounder often picks up echoes from small fry. It is obviously very important to be able to recognize such irrelevant recordings in order to distinguish them from recordings that may lead to the catching of fish. Ordinarily, the irrelevant recordings will register more diffusely, have a more foggy appearance, than echoes from fish. The latter are more distinctly coarse grained and darker. Also, the irrelevant echoes disappear faster when the sensitivity is reduced.

Occasionally, cod and haddock appear in such dense shoals at the sea bed that the echoes from single fish become undistinguishable. Echoes from such heavy concentration of fish may become so powerful as to cause blocking. The stronger the blocking, the denser the shoal. Irrelevant recordings are rarely strong enough to cause blocking.

Figure 8c—
At the bottom, diffuse irrelevant record; higher up, single cod. Record made with vessel at slow speed.

Fig. 8 reproduces some echograms that may facilitate the interpretation of fish recordings. But this is, ultimately, a skill that can come only from personal experience.

This report explains briefly the basis which is necessary for the understanding of the operation of the echo sounder and the interpretation of echograms with a particular view to the trawlers and long-liners.

Because the white line system can be switched on or off at will, the white line recorder is eminently suitable also for midwater and surface shoal-fishing.

The Simrad white line recorder is now extensively used for both purposes in fishing vessels and research vessels for a number of countries such as Norway, Iceland, Italy, Spain, South Africa, Canada and U.S.A.

Behind the new Simrad white line recorder lies years of research and development in co-operation with the Norwegian Directorate of Fisheries. The result is a new aid to fishermen enabling them to set their gear exactly where the fish is located, thus increasing their catches.

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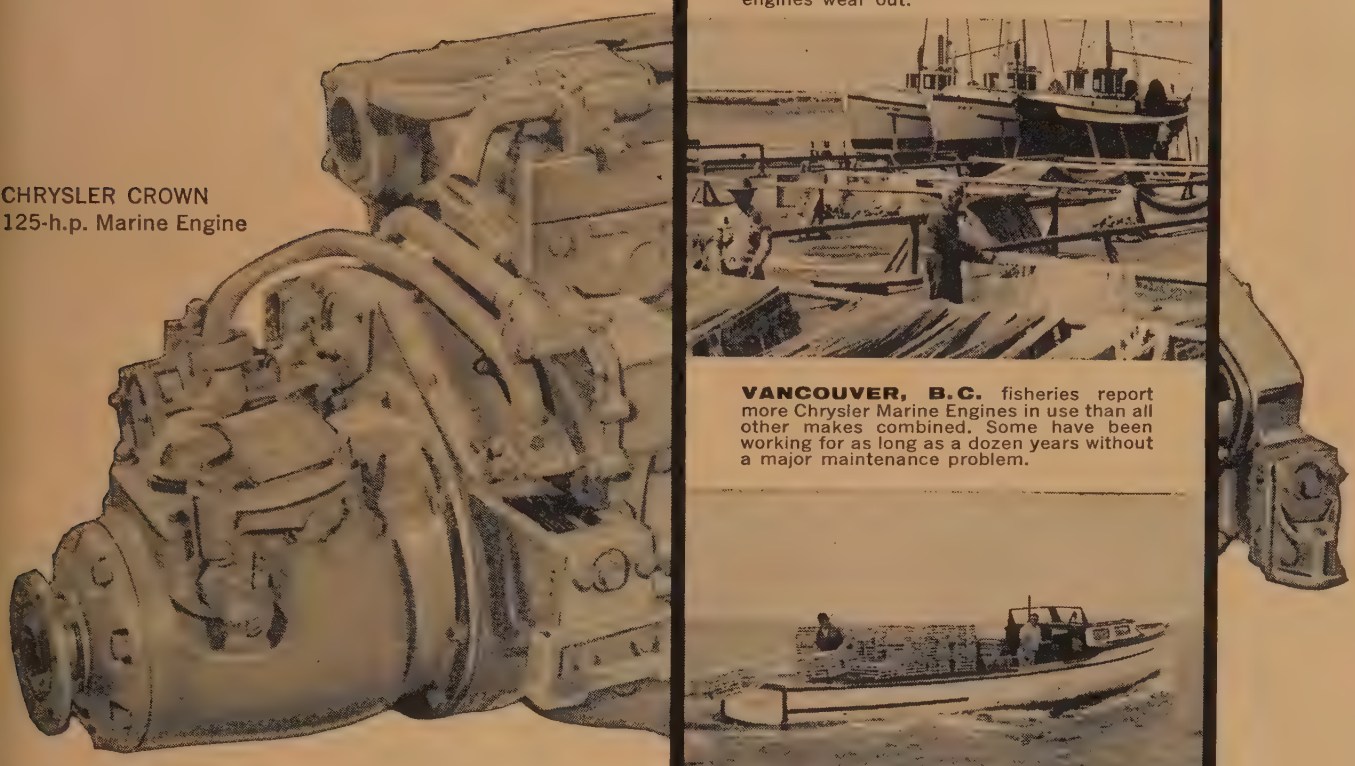

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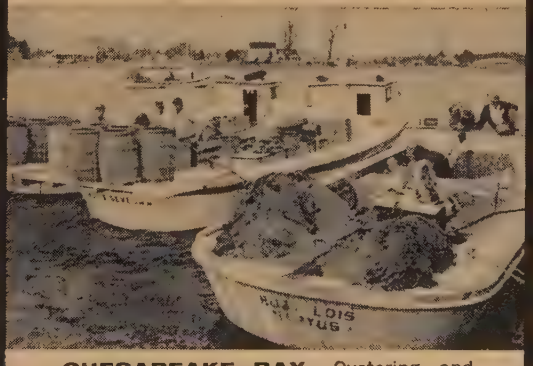

CHESAPEAKE BAY. Oystering and crabbing boats pull two heavy dredges 10 to 12 hours a day—must use the clutch as often as 125 times a day. In this industry, Chrysler engineered reverse and reduction gears are outstanding.

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ALUMINUM GILLNETTERS — A Progress Report

● With bad weather and "scratch" fishing in Cook Inlet during the 1959 season fishermen and operators alike watched with considerable interest the performance of the ten aluminum gillnetters put into service by Kenai Packers.

The ten new boats were somewhat of a departure from traditional gillnetters and there were many who felt they might be the answer to problems confronting operators of older boats.

In size the new boats were within the "Alaska limit" — 32′ — but they were somewhat beamier — 11′6″ — and from an operating point of view quite fast—15 knots.

As the season progressed with both fishing and weather conditions ranging from poor to bad the performance of these boats began to show a pattern. Fishermen assigned to the boats by Kenai Packers found that they were taking substantially more fish than fishermen using conventional-type boats.

● The salmon run was below normal in Cook Inlet—Carl Nash of Friday Harbor, Washington, who fished one of the new boats, called it "scratchy fishing." Nevertheless, Nash said the aluminum boats produced 10 to 20 per cent more fish than conventional wooden gillnetters.

The reasons for this, according to fishermen using the boats, were two: One; the sea-keeping qualities of these new gillnetters were far beyond the expectations of the builders and fishermen alike. It was found early in the season that the aluminum boats were able to fish considerably beyond the time when weather drove the others into shelter. Thus the ten fishermen using the new boats were able to fish longer.

Second; the speed of these ten boats enabled fishermen using them to run considerable distances to where fish were known to be and still get their nets in the water before fishing closed for the day. In one instance a distance of 25 miles was covered by one of the boats and 800 fish were taken before closing. Conventional gillnetters operating in the same area were unable to travel the distance and get any fishing at all before fishing closed for the day.

● Returning to the sea-keeping qualities of these boats it must be noted that many of the fishermen have made the comment that not the least of the advantages built in is the flotation which make it impossible to swamp them. Operating under tough weather conditions these boats were "unsinkable" and swamping was, therefore, not a serious problem.

Thus a fleet of ten boats have given operators new performance targets as a reference for future construction:

Speed for faster turn-around and unloading.

Speed for reaching good fishing wherever it may be during open hours.

Seaworthiness for greater safety and for longer fishing.

Greater carrying capacity.

Cheaper operation due to less hull maintenance.

More comfortable quarters for the fishermen.

Designed and built by the Marine Construction and Design Company of Seattle the new boats are built from Kaiser aluminum alloys throughout. All-welded construction of corrosion resistant aluminum the boats are inexpensive to maintain, fast enough to reach the fish, big enough to carry a good load safely, and operate with a degree of flexibility impossible with wooden boats of comparable size.

A-C ALLIS-CHALMERS

New — from Allis-Chalmers

New Power for 'Frank F' for Greater Fuel Economy

The new Allis-Chalmers Model 21000 Marine Diesel Engine, recently installed in the trawler, 'Frank F', delivers 230 continuous horsepower at fuel savings of from 1 to 2½ gallons per hour over comparable equipment.

The 'Frank F' logged 10.2 knots on her trial run and owner Rollin Crump was well pleased with the 2 knot increase in boat speed.

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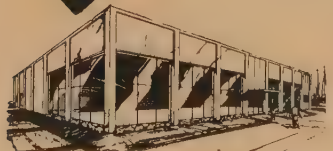

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For Sale: 1 cylinder, 25 horsepower GMC Engine. Roy M. Johnson, 2550 Fashion Ave., Long Beach, California.

FISHING BOATS — Many now moored at Moss Landing Harbor ready for inspection: Monterey Clippers, Salmon Trollers, Refrig. Northern Albacore Trollers, Draggers, Seiners and other types. From $1,000 to $75,000. DON WOODWARD BROKERAGE, at Standard Oil Dock & Marine Store. Tel., Castroville NEwton 3-2620; Box 45-A, Moss Landing, California.

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B. C. Government Won't Study Union Complaint

British Columbia's labor minister, Lyle Wicks, has turned down a plea for governmental investigation of the United Fishermen and Allied Workers Union on the ground that the provincial administration has no authority over union affairs unless there is violation of a provincial statute.

A group in Kyuquot, west coast of Vancouver Island, calling themselves a "citizens Committee" complained of "disruptive forces" in the fishermen's union, claiming that it had been largely responsible for the two weeks' strike of fishermen.

Officials of the union did not regard the complaint seriously.

Miss Anna Aliotti, daughter of Sal "Maestro" Aliotti, former owner of the Monterey purse seiner **Phyllis,** and Mrs. Aliotti, was married last month to Joe Cardinalli, son of Vincenzo "Mananzzo" Cardinalli, well known Monterey fisherman, and Mrs. Cardinalli.

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California Shrimp Catch On the Rise Again

The California ocean shrimp set another record last year, and prospects look excellent for another increase this year, according to the Department of Fish & Game.

Ocean shrimp, a resource discovered through department research in 1951-1952 has increased in total landings every year and in 1958 set a record of 1,728,680-lbs., with a retail value of nearly $1,000,000.

Landings of ocean shrimp last year were up more than 300,000-lbs. over 1957 and double those of 1955.

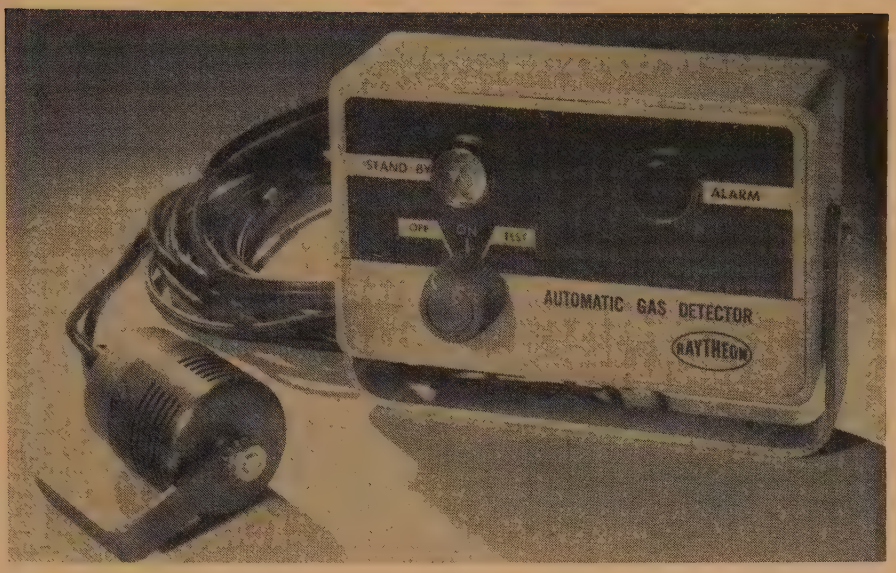
The department said it was watching the ocean shrimp resource closely to assure a sustained yield, but has recently been able to recommend an increase in the catch quota. The Fish & Game Commission has already increased the quota from Pt. Arena to a line just below Ferndale in Humboldt county, and it will consider a recommendation by the department that the quota be raised in the area off Eureka and from San Mateo county to Pt. Concepcion.

Samoa Albacore Fishing Good and Prices High

Albacore tuna fishing out of the Japanese overseas base of American Samoa was good during the summer and the price since the first of the year gradually rose from the low of US $250 a ton to $310 in July. For this reason, the Japanese vessel No. 18 *Zensho Maru* (158 tons), which fished en route to Samoa on a new ground east of Australia and caught about 90 tons, mostly Albacore, landed a fare worth over US$27,000, a new record for Samoa.

Andrea Parinello, 55, owner of the San Francisco troller **Santa Inez,** dropped dead from a heart attack recently. He leaves a wife and children.

Shoreline Diesel Maintenance, Fishermen's Wharf, San Francisco, is providing a rebuilt GM 6-71 for the party fishing boat that **Clyde Young** is having built in Long Beach.



Safety Contributes to Fishing through this new automatic gasoline fumes detector produced by Raytheon. It utilizes infra-red phenomena to warn fishermen. Ease of testing is one of its salient characteristics.

The Silent, Sleepless Box-on-Watch —

● Coming within our liberal definition of subject matter suitable for this special report on "Electronics in Fishing," the new automatic gas detector produced by the Raytheon Company is supplying fishermen with protection which contributes to the success of their fishing.

This new automatic gasoline fume detector departs from previous patterns. It employs a platinum filament which emits infra-red rays when gasoline fumes are present. This "black light" strikes a solar cell, shielded to "see" only the platinum wire.

The solicon solar cell, employing techniques developed in Raytheon misselry and space technology senses the infrared energy given off by the platinum filament and converts it into a tiny electrical signal which, amplified by a transistor, energizes an alarm system, warning the fishermen that gasoline vapor is present.

L. S. Smith, Tunaman, Dies

Louis S. Smith, a tunaboat skipper who had lived and worked in San Diego for 14 years, died last month in San Francisco of a heart ailment. Mr. Smith, 50 years old, was a member of the Sailors Union of the Pacific, and of the Fishermen's and Cannery Workers Union in San Diego.

Giovanni Pennisi has sold his interest in the Monterey trawlers, **Two Bros. G. II,** and **Two Brothers,** to his partner, **Francesco Grillo,** Pacific Grove.

Japanese Shrimpers Test Mexico's Pacific Resources

Two Japanese shrimp trawlers started operations off the Mexican Pacific coast early this fall under a contract between I. Rodriguez and Ito Chu, a Japanese trader.

The vessels, *No.* 16 *Myojin Maru* (150 tons) and *No.* 8 *Hajime Maru* (135 tons), are owned by Nichiro Gyogyo K.K., which is also supplying skilled personnel.

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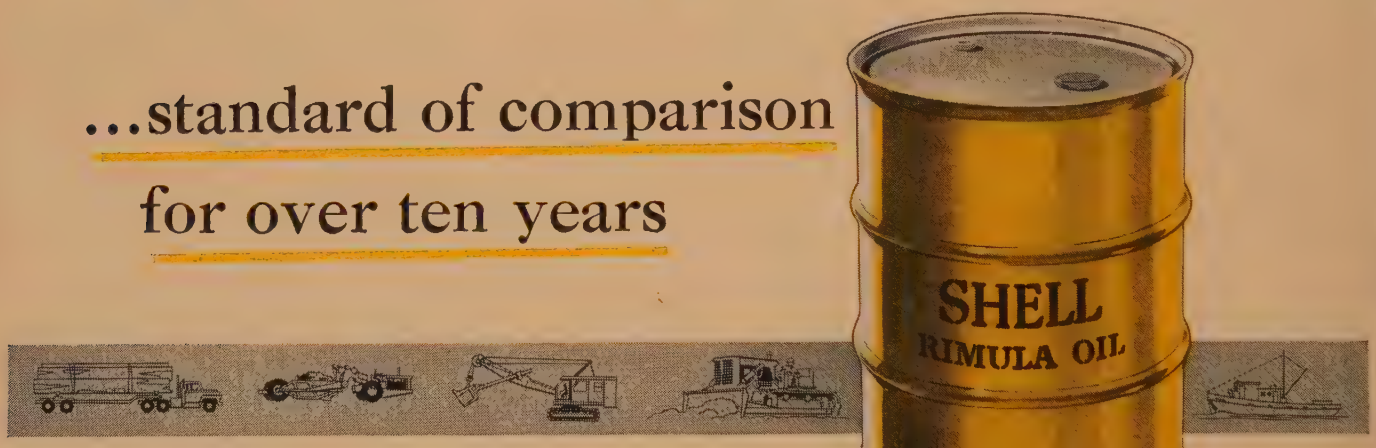

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Appendix to this article in Report file under Author.

OPTIMUM ESCAPEMENT

Of Red Salmon in the Nushagak Area of Bristol Bay

1. The escapement and return from the Red salmon runs in Nushagak Bay since 1946 have been estimated by means of a comprehensive program of study by the Fisheries Research Institute under contract to the Alaska Salmon Industry, Inc.

2. The maximum *return* has occurred with escapements between one and two million Red salmon.

3. The maximum sustained yield has occurred with an escapement of 600,000 Red salmon although there has been little difference in the yield between escapements of 450,000 and 1,250,000.

4. Early records of escapement indicate that some of the much larger early runs were also derived from relatively small escapements.

5. It is concluded that the present low level of production is not primarily due to low escapement, but probably to other factors such as uneven escapement to the different lakes and competition with very large populations of other fish.

By
WILLIAM F. ROYCE
and
OLE A. MATHISEN

● Since the federal management of the Alaskan salmon fisheries began, the principal method of management has been to restrict fishing in an attempt to obtain a sufficient escapement. Regulations have reduced the efficiency of fishing gear by imposing restrictions on the place and time at which salmon may be taken and the kind and size of gear that may take them. With an increasing scarcity of salmon, the restrictions have become more and more stringent and the efforts of the fishermen to obtain the valuable salmon more and more vigorous so that today about half of the salmon runs in Bristol Bay is being harvested with two to three days' fishing per week.

Other methods of management, including fish hatcheries, fishways on blocked or partially blocked streams, control of further stream blocking or pollution, have been used from time to time, but none of these has had any appreciable effect upon the total salmon production. Hatcheries have been abandoned; stream areas that have been opened up to salmon spawning comprise but a tiny fraction of the more than 2,000 streams available to salmon in Alaska and the progress of pollution and dam construction to date has fortunately had a negligible effect on salmon.

Thus, the primary control has been on the size of escapement. The level of escapement in streams where counts of the escapement were obtained was specified by law in the White Act in 1924 which required that half of the run be allowed to escape. Such a provision has not arrested the decline of production. The act has recently been repealed and now there is no legal requirement for the size of escapement.

● It is the purpose of this paper to present the available data on the relation between the escapement and return in the Nushagak River system of Bristol Bay which is one of the major Red salmon producing systems of Alaska. If such an analysis shall lead to results applicable to management, it requires that a major cause of the variation in the size of salmon runs be the numerical size of the escapement. There are, however, many instances where small escapements have been followed by large returns and where large escapements have not been followed by large returns. Hence, it is clear that the relation between escapement and return involves many other factors besides the size of escapement. However, many of these factors are either not known today or our knowledge of them is in the infant stage with few exact data available upon which regulations can be based. The justification for an inspection of escapement and return data lies in the fact that it seems possible from past experience to provide a yardstick for management of the Nushagak fishery. Such a yardstick

Editorial Comment—

● *Pacific Fisherman* is proud here to present a scientific article by two biologists specializing in research into Alaska salmon problems. The article itself is a somewhat condensed version of a courageous and significant paper delivered at the recent Alaska Science Conference in Juneau. It voices in scientific terms conclusions which fishermen in their own way have felt from their years of experience.

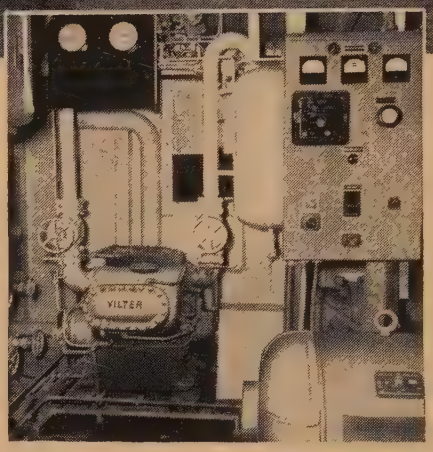
In reproducing this paper it has been necessary to omit much of the mathematical philosophy by which the data have been fitted to the problem, and the logarithmic figures demonstrating this process. Omitted material can be secured from the Fisheries Research Institute, University of Washington, if it is desired to examine the reasoning in close detail.

Dr. Royce is director of the Fisheries Research Institute, and formerly was Alaska assistant regional director of the U.S. Bureau of Commercial Fisheries, in charge of federal fisheries research in Alaska.

Dr. Mathisen is Bristol Bay project leader for the Fisheries Research Institute, a position he has held since the founding of the Institute under Dr. W. F. Thompson in 1946.

F. B. Walker & Sons' new 135-ft. Tiger Shark menhaden vessel is fully equipped with a Vilter refrigeration system to protect its valuable catch.

"Tiger Shark" joins growing Gulf fleet of VILTER REFRIGERATED Menhaden Vessels



View of one of the two diesel-driven Vilter VMC ammonia compressors supplying about 150 tons of refrigeration. A Vilter 30" x 18' dual condenser is also installed.

Firm, sea-fresh menhaden, no spoilage, no loss of volume to reduce profit, extra days afloat—all point to the many advantages of Vilter refrigerated fishing vessels. A recent addition to the growing Gulf fleet of refrigerated boats is the *Tiger Shark* built and operated by F. B. Walker & Sons of Pascagoula, Mississippi.

The *Tiger Shark* features a complete Vilter shipboard refrigeration system consisting of two VMC ammonia compressors and a dual condenser. This installation supplies refrigeration to the four fish holds with a capacity of about 1,100,000 fish which are held at 34-36 degrees in seawater. This is a proven system benefiting from such previous Vilter installation experience as in the *Lois C* and *Lois Kay* of the Castigliola Shrimp Co.

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Vilter equipment for the "Tiger Shark" was sold by George Castigliola of Pascagoula, Miss.

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may mean whether to allow one or two millions of fish to escape to the spawning grounds. Large sums are at stake in every such decision.

The underlying data have been obtained by the Fisheries Research Institute with funds made available by the Alaska Salmon Industry members. The catch and escapement data represent but a small fraction of the information on the Nushagak salmon runs collected by the Institute according to a far-sighted plan formulated by Dr. W. F. Thompson, the founder of the Institute. The over-all objective of Dr. Thompson's plan was to show the time and place where mortalities occur in the life of the Red salmon. The full meaning of catch and escapement data will be clear only when a comprehensive analysis of the whole life history of the salmon is made.

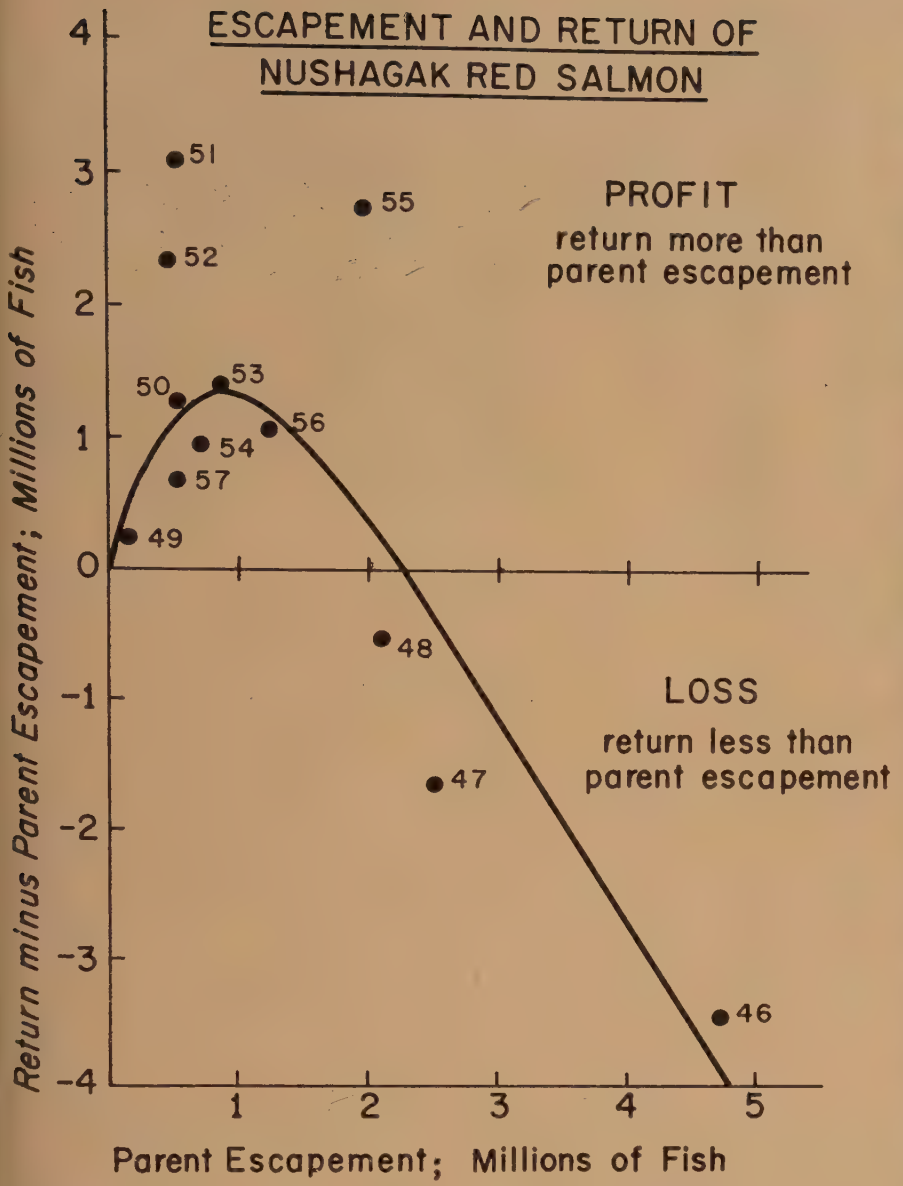
The most profitable level of escapement discussed below applies to the period from 1946 to the present in the Nushagak district. Data collected in the future may present a different picture. However, in the absence of a theory which can explain adequately the relationship between an escapement and subsequent return, the regulatory authorities can hardly find a better basis for making decisions today than that founded on recent experience.

History of the Nushagak Catch

• The Red salmon fishery in Nushagak Bay started about 1884 and was the first major fishery in the Bristol Bay area. Incomplete statistics are available from the early years, but the catch of Red salmon appeared to range up to about a million fish annually until 1898 when there began a rapid increase in production. By 1901, production had reached 5,400,000 and fluctuated around the level of 5,000,000 fish annually until 1919, when the catch dropped to the lowest level since 1897. Thereafter the general level of production fluctuated around 3,000,000 fish for nearly three decades. Then another drop occurred in 1949 which was followed by production near a level of 1,000,000 fish up to the present time.

Until 1906, there was no evidence of a pronounced cycle in the production. Since that time, the production has fluctuated considerably and erratically, with the low points three to six years apart. At no time has there been a well defined cycle such as occurs in some other Red salmon systems.

In salmon populations, the general relation between escapement and return can be deduced from some general considerations. If there is no es



capement, there will be no return. With very large spawning populations, the capacity of the spawning area to receive the eggs or the capacity of the waters to rear the young fish will be exceeded; consequently very large spawning runs cannot reproduce themselves. Somewhere among moderate sized runs it is possible to harvest a surplus.

Two curves have been fitted to the data. First, we have used the observed data on catch and escapement and second the observed data plus the expected returns based on the production of smolts. It is evident that the two curves are very similar. Both show that the maximum return is to be expected with an escapement between one and two million salmon.

The curve based on observed plus expected returns has been further transformed to a yield curve, i.e., the total return minus the size of the escapement producing it. This indicates that the maximum level yield (or profit) is to be expected from a total escapement in the Wood River system of about 600,000 salmon. However, the curve shows little difference in the yield for escapement sizes between 450,000 and 1,250,000. Escapements of more than 2,000,000 are not expected to reproduce themselves, and escapements below about 400,000 are apparently too few.

Use of Escapement-Return Relation

● People with the responsibility for managing this major fishery will immediately question whether this curve, based on data from 1946 to the present, is adequate for the purposes of management and may indeed be used safely as a guide for regulating escapement. There are several factors to be considered in this connection which admonish caution in the use of the presented reproduction curve. But a substantial amount of circumstantial evidence suggests that the relation shown here also merits an earnest consideration.

One of the aberrant points, the re-

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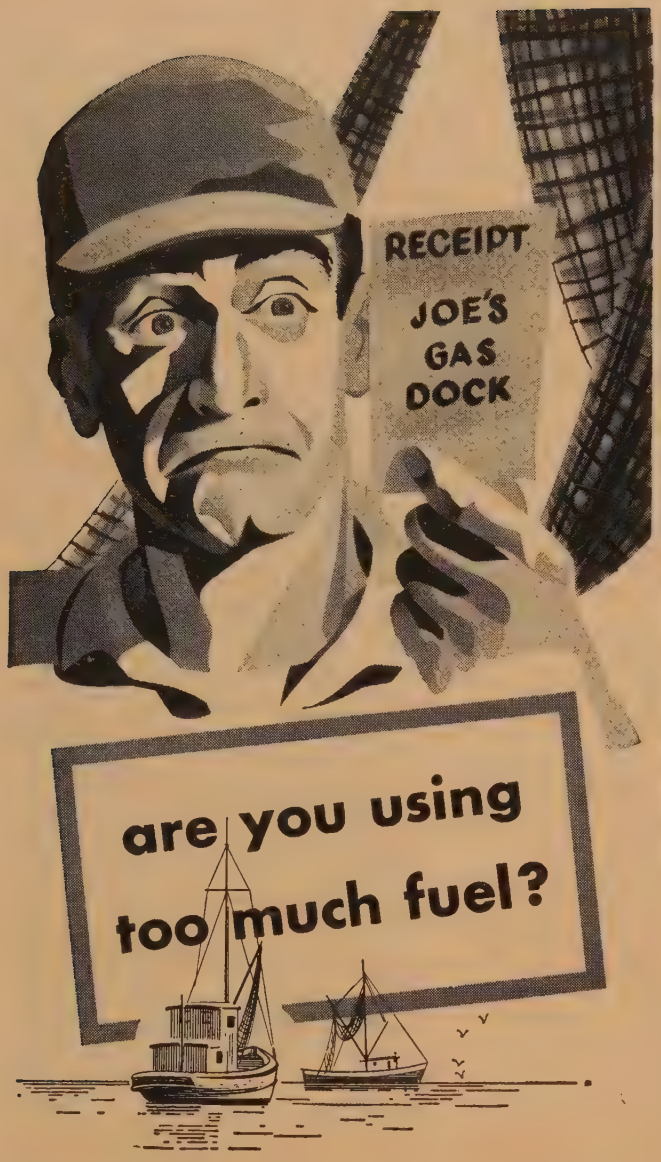

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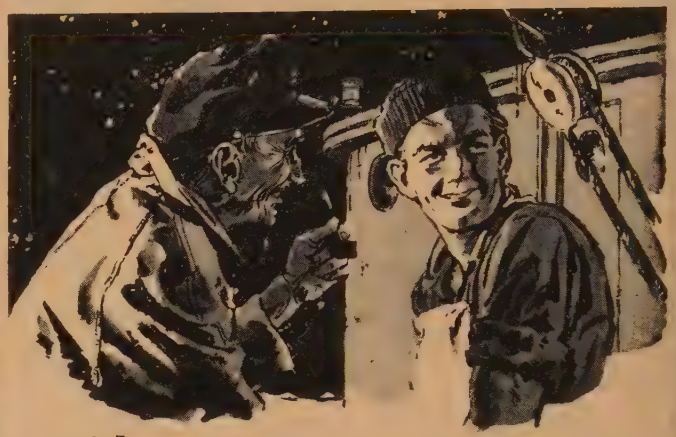

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turn from the 1955 spawning is probably due to unusually good survival in the sea, a source of variations presumably not associated with the density of spawners in any one system. This return in 1959 was accompanied by exceptional returns of Red salmon in most Bristol Bay streams which had spent two years at sea. It was much greater than was expected from the smolt index in 1957. Further, it was preceded by a highly unusual run of Pink salmon in 1958 which had gone to sea at the same time.

Another factor which may affect this curve is the catch by the Japanese high seas fishery from these stocks. This became significant in 1955 and has continued. The effect of this fishery, however, would be to reduce the return from the escapements of 1951 to 1955, most of which were small and already included in the region of the curve that indicates a maximum production. The effect of including this catch would not shift the peak of the curve, but indicate a still higher return from escapements between ½ and 1 million fish.

From historical records one can find further support for the suggested reproduction curve. A comparison of total catch and escapement in the Wood River system for the years 1908 through 1919 shows that high production was obtained from relatively small escapements. These data which were obtained by the Bureau of Fisheries and published in the annual reports of the Alaska Fishery and Fur Seal Industries show that in all but two of the 11 years for which data are available, the escapement up Wood River was less than 1,000,000 fish. The Wood River chain of lakes comprises half of the surface lake area of the Nushagak system and in recent years has received from 2/3 to ¾ of the total escapement. It appears to be safe to assume that during the early years the Wood River did not on the average receive less than half the total escapement, and thus the runs of 5,000,000 to 8,000,000 fish that occurred in 1915 through 1918 came from annual escapements of substantially less than 2,000,000 fish in the years 1909 through 1913. However, weir counts from such an early period probably reflect more the general trend of escapement levels rather than being exact figures. The real interpretation of these data will not be evident until one can explain the abrupt fall in production which took place in 1919.

Other evidence appears in the growth and survival of the fingerlings from the rather large escapements of 1955 and 1956. In 1955 especially, spawning was heavy in Lake Aleknagik and Lake Nerka and the fingerlings which resulted grew more slowly than they had in earlier years and many more of them remained in the lake an additional year before going to sea. This was largely a result of food competition with the resident population of sticklebacks. Such reduction in size of smolts has been shown to very significantly reduce their survival in the sea (Burgner, 1959 and Foerster, 1954).

The indicated level of the most profitable escapement in the Nushagak system is a function of the average escapement pattern which has shown a relatively large escapement to the two lower lakes in the Wood River chain and a relatively light escapement to the two upper lakes and to the Tikchik lakes. Different escapement patterns may require different levels of desirable escapements .

It appears therefore that one reasonable course of future management of the Nushagak fishery lies in actions dictated by past experience while maintaining the present system of observations needed to decide whether or not the productivity of the system is changing in a way which will warrant larger escapements.

Unless the system of observations of the Nushagak run is maintained and expanded, no sound basis will ever be provided upon which a management program of this salmon resource can be formulated and adjusted to fit the prevailing conditions. Similar observations are needed urgently on other salmon runs in Alaska.

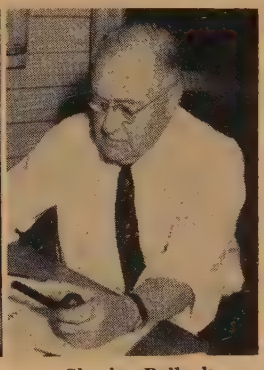
Nushagak Red Salmon Escapement and Subsequent Return

(Boldface figures are estimated returns from the smolt index)
(In thousands of fish)

Year	Escapement	Return After 4 yrs.	5 yrs.	6 yrs.	Total
1946	4,719	570	669	14	1,253
1947	2,507	229	600	69	898
1948	2,091	480	1,035	13	1,528
1949	138	174	167	4	345
1950	573	824	909	131	1,864
1951	540	2,086	1,420	74	3,580
1952	434	926	**1,781**	92	2,799
1953	829	**1,124**	1,085	...	2,209
1954	692	1,185	414[1]	**50**	1,649
1955	1,934	3,825[1]	**830**	**50**	**4,705**
1956	1,214	**1,150**	**1,058**	**50**	**2,258**
1957	510	**666**	**465**	**50**	**1,181**

[1]Preliminary data from case pack figures for 1959 catch.

Mr. and Mrs. Gruble Mr. and Mrs. Brenner



Charles Pollock

P.C. Oyster Growers Elect Earl Brenner

● The thirteenth annual convention of the Pacific Coast Oyster Growers Association ended its three-day series of meetings August 28 with a banquet in the Cascade Room of the Benjamin Franklin Hotel in Seattle. Presiding was Edward J. Gruble, Seattle, and newly-elected president for the coming year is Earl R. Brenner, Olympia. The presidents and their wives are shown in photo above—Mr. and Mrs. Gruble at left, Mr. and Mrs. Brenner at right, standing at the conclusion of the banquet, where featured speakers included Gov. Albert Rosellini and W. Walter Williams.

Charles Pollock, Secretary-Treasurer, is shown at right, working at his desk in Seattle where the year-round activities of the organization are coordinated.

At the oyster products cutting, supervised by Dr. Ivor Jones, 72 samples in eight categories were examined. Several scientific papers followed, with John A. Dassow presiding.

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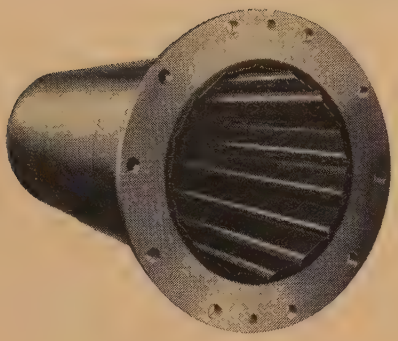

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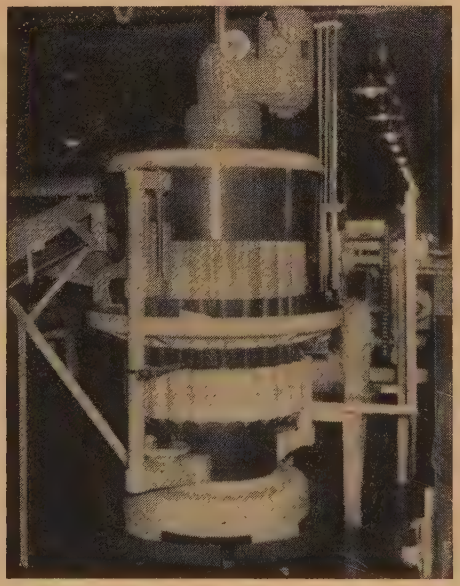

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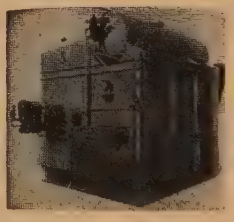

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FOOD FISH MARKETING

News and Views of National Trade in Fish and Shellfish

Section of PACIFIC FISHERMAN — October, 1959

Competitive Confusion Marks U. K. Salmon Trade

- An Editorial Letter from London

● Free salmon trading in Britain at the end of its first year of freedom in two decades has developed a bewildering degree of competitive confusion—apparently almost as bewildering to the competitors as to the foreign inquirer.

On one point, and one only, are the three elements of this secondary market in agreement; and this is that *the price of salmon is too high*—too high for active consumer buying, perhaps too high for safety.

There is a tendency also to blame the packer for the fact that the British market bought avidly at the highest prices it has ever paid in a free market. This of course overlooks the fact that the packers—Canadian and American at least—were astonished to find the United Kingdom ready, even anxious to buy at U. S. and Canada domestic prices; instead of demanding, and getting, the usual export concessions.

● The three elements in today's British trading in salmon are:

Distributors, which import, or buy from brokers, and sell under their own advertised brands;

Brokers, who sell for producers on commission, under packers' brands or buyers labels;

"Wide Boys" or speculators, who emerged from the black and gray markets of the murky days of control heavy with profits and suffering under the delusion that they could duplicate them in a free market.

● The situation obviously is "touchy." At least one conservative house had withdrawn from selling activity at the time it was visited early in September.

Admittedly some markedly inferior goods have been imported by the "wide boys" in an effort to build inventory; and at prices at or above the cost level of goods meeting the specifications of old houses with reputations which they protect above their profits.

Just why the basic trade was so anxious to buy is a matter which produces much disagreement.

Some say it was to assure adequate supplies of the kind of quality for which their brands stand.

Others believe it was to maintain continuity of supply at a cost which could be averaged down by stocks carried over from 1958, and thus to provide protection against the almost certain shortness of 1960 production in the Sockeye, which Britain likes best.

A third view was that the buying vigor grew out of competition and the strong desire to prevent first quality foods from falling into the hands of speculative operators.

You may be sure that the British market has ample understanding of the potentialities in the heady prospects for Fraser River Sockeye production in 1961 and 1962; and what two Big Years in a row can mean, if they come.

Tuna in Britain

● The tuna trade in Britain appears to be reviving slowly after the heavy declines it suffered in the "El Nino" years of 1956 and 1957 in Peru; and last year's British predilection for the newly-freed salmon.

● Here are some comparative prices from the shelves of a modern London grocery:

Libby's Red salmon ½ lb., Japanese pack . . . . . 4/ (56¢)
Carnation Red from Allen Sales Co., Seattle, ½ lb. . . . . 3/11 (54¢)
Throne, Canadian Sockeye, ½ lb. . . . . 3/6 (49¢)
Landyard, Coho tall, 1 lb. . . 5/ (70¢)
Princes tuna, ½ lb. . . . . 2/3 (31¢)
My Lady, tuna in jelly, ½ . . 2/ (28¢)
Armour's Star tuna, probably Japanese . . . . . 1/7 (22¢)

Come-back in tuna benefits Peruvian bonito primarily. Some Japanese Skipjack is also used, but the volume is light and the growth slow. It sells on *price,* and *price* of tuna vs. salmon seems to account for today's up-turn in tuna, whose benefit in volume falls in large degree upon the tuna with the lower price tags.

Most British houses use different labels on bonito and Skipjack, but some large factors do not discriminate between the two varieties, following the common practice with light meat tuna in the U.S.

British consumers have never learned to like tuna as well as in the United States. They want it "pink," neither white as Albacore nor "tan" as Skipjack. Despite the fact that in

California Imports of Frozen Tuna

Cumulative data in tons for 1959 through Sept. 12, and for other years to the nearest comparable date. Data from U. S. Market News Service.

	Albacore	Skipjack	Yellowfin	Unclassified	Total
San Francisco	1,111	252	6,931		8,294
San Pedro	7,592	6,737	29,841	223	44,393
San Diego	720	203	3,553		4,476
Total to Sept. 12	9,423	7,192	40,325	223	57,163
1958	10,623	4,734	34,097	328	49,782
1957	15,756	8,551	17,707	460	42,474

salmon the British are inclined to "eat with their eyes" they have never come to like Albacore.

Japan Offers Halibut Actively in Britain

One of the most notable current developments in the international fisheries trade is Japan's offering of substantial quantities of frozen halibut in the British market.

The first offering, about Sept. 5, involved 27 tons, priced at 21/ ($2.94) per "stone" cif, London for all-white halibut dressed headless and trimmed U. S. style. As there are 14 lbs in a stone, this figures out at an attractive 21c per lb.

In the British market Greenland halibut is priced at 27-28/ per stone for white fish and Norwegian about the same.

The Japanese inform the British that they have 1,000 tons of frozen halibut to sell—not all in the U. K., of course.

Where it came from they do not say, but the absence of any gray fish and the general type of fish in the sample support the opinion that it was taken by Japanese trawling operations in eastern Bering Sea.

This is perfectly legal under the North Pacific treaty, whose halibut abstention does not extend above the Aleutians, but it is bound to prove an active irritant to Canadian and American opinion.

Smoked Salmon Is High

● Smoked Scottish salmon is about the highest priced food commodity in Britain.

Fine quality Scottish smoked salmon is commanding 35/ per pound. If you are interested, that figures out at $4.90.

Seattle Market

Market prices currently quoted at presstime by Pacific Northwest brokers and cannery sales department, cases of 48 tins, unless otherwise specified, good quality, as reported by the U. S. Bureau of Commercial Fisheries, Market News Service.

Items and Packages	Per Case
Puget Sound	
Sockeye, halves	$24 -25
Sockeye, quarters	-14
Alaska	
Red, talls	36 -37
Red, halves	23 -25
Pink, talls	24 -25
Pink halves	13.50-14
Pink, 4-lbs. (12)	-25
Coho, talls	29 -32
Coho, halves	18 -18.50
Coho, 4-lbs. (12)	-33
Coho, quarters	11 -11.50
Chum, summer, tall	-21
Chum, summer, halves	11.50-12
Chum, 4-lbs. (12)	22 -21
Chinook, talls	-30
Columbia River	
Blueback, halves	25 -26
Blueback, quarters	14 -14.50
Chinook, fancy, halves	-26
Chinook, fancy, quarters	-14.50
Chinook, choice, halves	17.50-18
Chinook, choice, quarters	-11.25
Silver, halves	-17.50
Silver, quarters	11.25-11.75
Tuna, Northwest Pack—	
Albacore, fcy., 7 oz.	13.50-16.25
Yellowfin, chunk, 6½ oz.	9.50-10.50
Tuna, Featured Pack—	
Albacore, fcy., 7 oz.	14.85-16.25
Albacore, fcy., 3½ oz.	9.10- 9.65
Albacore, chunk, 6½ oz.	12.50-14.25
Albacore, chunk, 3 oz.	7.50- 8.
Lightmeat, fcy., 7 oz.	14.25
Lightmeat, fcy., 3½ oz.	8.55
Lightmeat, chunk, 6½ oz.	11.00
Lightmeat, chunk, 3 oz.	7.50
Canned Crab—	
Dungeness, 24, 6½ oz.	12.50
Dungeness, 3¾ oz.	7.50
King, 48, 7½ oz., fcy.	29
King, 24, 15 oz., fcy.	26.50
King, 24, 7½ oz., fcy.	14.60
Northwest Shrimp—	
Wet Pack, 24, 4½ oz.	7.25
Alaska Shrimp—	
Tiny, 24, 4½ oz.	7.25- 7.50
Small, 24, 4½ oz.	8.50- 9.00
Medium, 24, 4½ oz.	10

Japan-Canned Albacore Price Elevated $2

(PF Staff Report)

After a $1.00 price reduction was agreed to late in May, on export price of canned albacore in brine to the U. S., on "Sale No. 5"—a two-month controversy ensued between packers' associations and trading firms. Packers insisted on price elevation in view of poor catch of Albacore. "Sale No. 6" did not include whitemeat packs due to the controversy.

At last in mid-August the negotiation between the associations came to an agreement. The export price was elevated $2.00 above the current level that had been applied to "Sale No. 5" for the standard whitemeat item and no change was made in the export price of lightmeat packs. Within the month "Sale No. 7" was announced and immediately activated a sale of 400,000 cases — half whitemeat and half lightmeat, for shipment in August and September.

At this writing, quite satisfactory response was reported in the sale of both packs.

N.F.I. Promotions Division Organized Under Duggan

Newly organized Fish and Seafood Promotions Division of the National Fisheries Institute becomes functional this fall under chairmanship of J. Roy Duggan, vice president of SeaPak Corporation, St. Simons Island, Ga.

Lewis Goldstein of the Liberty Fish Co., Philadelphia; and Clarence J. Morrow, National Sea Products, Ltd., Lunenberg, Nova Scotia, were elected vice chairman; and William S. Gilbert of the New England Fish Co., Seattle, secretary-treasurer. The first meeting was held in Gloucester, Mass.

First project of the new division is the Fish and Seafood Parade, staged nation-wide in October.

Simpson, Roberts Advances Harrison to Directorate

Simpson, Roberts & Co., of Liverpool, England, have announced the appointment of Charles R. Harrison as a member of the board of directors.

Mr. Harrison, who makes his home in Shediac, New Brunswick, has been manager of Simpson, Roberts & Co. since 1946, and he continues in that post.

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GEORGE V. CASTAGNOLA, chef de cuisine, doubles as master of ceremonies at the September Fish and Seafood Week dinner of the Southern California Fisheries Assn. At the table, left to right, are **Max Freeman, Al Lantz, Mr. Castagnola, Secy. Bert Ghio, Joe Sulentor, Antonio Trapani** and **Louis Vitale.**

Seafood Week Kickoff Goes Over

Fish and Seafood Week, October 19-25, got off to a rousing start in Southern California with a kick-off dinner meeting of the Southern California Fisheries Assn., which is leading the sponsorship of the annual fish promotion week.

About 80 members and friends—approximately 90% attendance—turned out to enjoy a splendid cioppino prepared by George V. Castagnola of Castagnola Bros., Santa Barbara, who drove to Los Angeles specially to assemble the ingredients and tell the Biltmore Hotel chef how to cook the cioppino.

The evening was partly devoted also to honoring the old-timers in Southern California's fresh-and-frozen fish fraternity, and Mr. Castagnola took a turn as Master of Ceremonies, introducing a number of the deans of the Southland's fish business.

New Directors Elected

Mike McGee of Los Angeles Smoking & Curing Co.; Dick Numamoto of Pacific California Fish Co.; and Jim Okamoto of American Fish Co. were chosen directors by acclamation, upon the report of a nominating committee headed by Frank Tsuchiya, past president and also of Pacific California.

The featured speakers were Bill Wade and Les Richter of the Los Angeles Rams football team. Each of the boys showed himself able to get up on his feet at the speakers' table as well as on the football field, and each gave the fans a good dose of the football gossip and inside information that every fan enjoys.

Of the old-timers present, Max Freeman of Certi-Fresh and Antonio Trapani made short talks. Joe Sulentor, co-chairman of the Fish and Seafood Week committee got in a few words about the coming event. The meeting was conducted by Al Lantz, Association president, with the usual able assistance of Secretary Bart Ghio. Mr. Ghio later announced that the board of directors would present to the Association a new slate of officers at the October meeting.

They Add Up To A Lot of Sales!

Oceanic
SALES COMPANY
3302 SMITH TOWER
SEATTLE 4, WASH.

National Fish and Seafood Week, Oct. 19-25, was the subject of a luncheon and cocktail party held by the Seafood Club of Chicago September 15. Viewing the lavish display of seafoods served were **Ralph Carr,** president, National Fisheries Institute; **Arne J. Suomela,** U. S. Commissioner, Fish & Wildlife Service; and **Arthur H. Frohman,** President, Seafood Club of Chicago.

Canned Salmon Market Strong in Most Areas

● Some late-summer confusion of the canned salmon market picture in the United States was caused by the contrast of excellent reports from large metropolitan areas such as New York, Chicago and New Orleans with unusually poor demand in the U. S. Southeast. Shipments have been slow to Georgia and the Carolinas, for instance, while short inventories were continually refilled in market centers of the rest of the nation.

At this writing the picture appears to be resolving itself into one of uniformly strong demand for all species and packs, and the weak Southeastern market of past months is thought to have been caused by large early build-up of inventories, now nearly worked-off, plus the fact that consumers in that area were more price-conscious, passing up orders as prices advance.

● Surprisingly good business has been reported on Red Salmon despite a $3 average price increase in cases of talls. While the Alaska Red pack was better this year than last, more of this year's pack was in halves due to the lack of a competitive Puget Sound Sockeye pack in that size; the unusually large off-cycle Sockeye pack of Puget Sound and British Columbia was still an off-cycle pack, small in comparison with last year, and unlikely to divert much of the total market for Red talls.

Business on Chums has been better than usual and this pack, in short supply, will probably be cleaned up by the end of the year.

Demand for Pinks, up to now very poor in the Southeast as stated above (and this is where Pinks usually sell best), is normal elsewhere in the nation. A lot of Japanese Pink talls did not come in until late spring and did not follow the market up. An accelerated movement of Pink halves is likely due to a small percentage increase in price, of only 50¢ per case.

S. E. Burkenroad Passes

S. E. "Syl" Burkenroad, 71, employee of Parrott & Co., San Francisco food brokerage house, and for many years canned foods sales manager for that firm, died suddenly last month.

Longview Fibre Promotes Finstad to Northwest

Arnold J. Finstad, who formerly was in the container division of the Longview Fibre Co. in Los Angeles, is now district manager of sales with headquarters in Portland, Ore.

There he succeeds Jack P. Converse, who retired during the summer from this position after 28 years with the company. Mr. Converse, however, is continuing in sales work for Longview Fibre.

ROBERT L. STIX, INC.
CANNED and FROZEN FISH
New Season Underway
OCTOPUS FOR BAIT
Contact us for Supplies
P. O. Box 278, Bronxville, N. Y. Tel: DE 7-6322

TWO GREAT BRAND NAMES IN FROZEN FRESH SEAFOODS

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Ship Ahoy

FRESHEST FISH IN THE FREEZER
More than 37 Delightful Frozen Seafoods in Both Brands
NEW ALASKA KING CRAB MEAT
6 oz—1 lb—2½ lbs—5 lb sizes
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PIER 31—SEATTLE, WASH.

Australian Bluefin Coming To America Frozen

Introduction of Australian Bluefin tuna to the American market can be expected in some volume this year, according to Alfred Hunter, managing director of the South Australian Fishermen's Cooperative, which has been canning tuna in Australia for three years for the domestic market; and which has arranged with Robert Stix, Inc., of New York to handle shipments of frozen Bluefin to the United States for canning.

In company with Mr. Stix, Mr. Hunter toured the Pacific Coast in August and September, studying methods of canning tuna here and consulting with operators interested in the Bluefin business.

In general, recent samples of Australian Bluefin are said to have canned out lighter in color than American fish of this variety.

It will be recalled that a few years ago the South Australian government arranged with Capts. Sverre and Lars Jangaard, formerly of Seattle and now of San Diego, to come to Australia and direct tuna fishing operations for a time. They returned highly enthusiastic over the tuna potential in South Australian waters, and the new industry has risen largely as result of their investigations.

U.S. Salmon Opening Price Cheers Japanese

(PF Staff Report)

Opening price list of new pack American salmon was reported at a higher level than had been expected by Japanese, and this has apparently encouraged the Japanese suppliers. Observers estimate that at least 1,300,000 full cases of various species have been committed through Sale No. 1 and Sale No. 2. The latter is delayed but was to take place at about October 1. It was expected to cover about 600,000 full cases, mostly of Pinks. At this sale No. 2, it is presumed that a price-up of $1.50 will be effected over the quotation of $27.00 applied to Sale No. 1 for Silver halves and perhaps $1.00 over the quotation of $19.00 for Pink halves. Also a slight "up" would be announced for Pink quarters but as for the Red salmon, the authorities of the joint selling organ seem to be taking a most deliberate attitude as to whether any price-up should be braved.

Mrs. Van Camp Passes

Thousands of people in the fishing industries, in many parts of the United States and in many foreign lands, last month extended deep sympathy to Gilbert C. Van Camp Sr. and his son, on the death of Mrs. Gilbert Van Camp Sr. in San Pedro, her home for more than half a century.

Mrs. Van Camp died late in the month in a San Pedro hospital, after a short illness. She is mourned not only by those who knew her as the wife of owner of one of the world's great fishing enterprises, but by the community at large. She was active in charitable and philanthropic work, and in the political life of the community, state and nation.

B. C. Fish Industry Cultivates Canadian Market

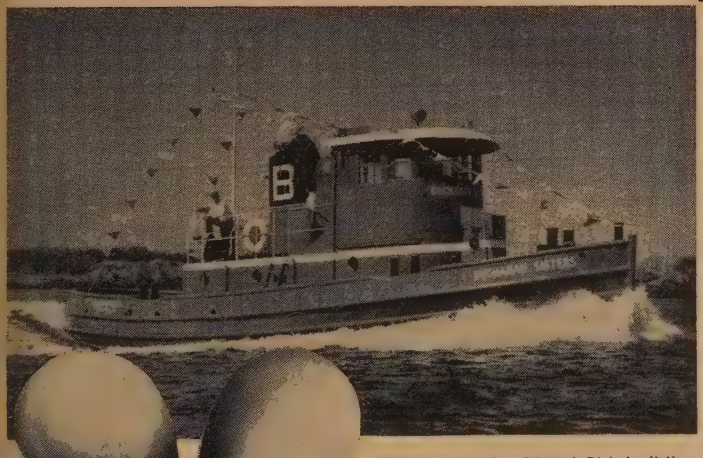
One of the major problems of the British Columbia fishing industry is how to increase fish consumption in its biggest and most dependable market—Canada. For that reason plans are being made for a promotion campaign this fall that will exceed all previous efforts.

Promotional dates for Canada's national Fish 'n' Seafood Week are October 19 to 25, and B.C. operators are joining with other members of the Fisheries Council of Canada in employing various media to expedite and intensify the sales program.

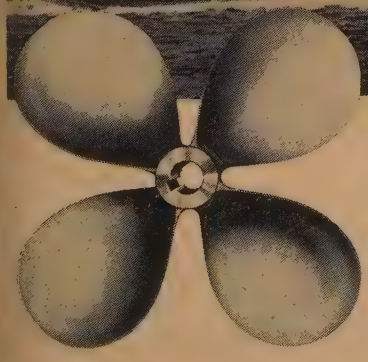
J. Walter Thompson Co. is handling the advertising campaign from its Montreal and Toronto offices.

On tugs, fishboats, commercial craft of all kinds...

it PAYS to use FEDERAL PROPELLERS



Built by Diesel Shipbuilding Company, this tug is equipped with a 60" x 42" 4-blade Federal wheel.



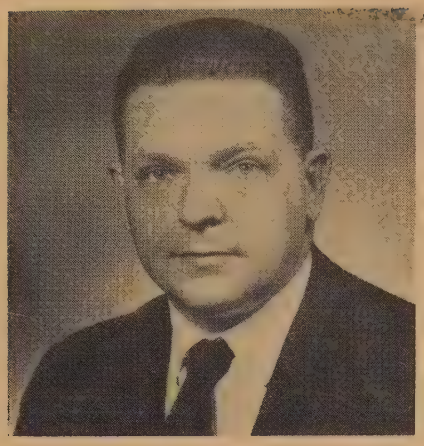
3 — 4 — 5 Blade Wheels in all standard sizes thru 72 inches.

These wheels are universally recognized as providing the finest, most economical performance, but that is only half the story. They're cast of pure, virgin metals (not one bit of scrap is used) in an alloy that makes them last as much as three times as long as wheels of ordinary bronze. When next you buy a propeller, either for a new boat or replacement, be sure it's a FEDERAL. It pays!

For an expert, FREE propeller recommendation for your craft, see your FEDERAL dealer or write for our propeller analysis form.

FEDERAL PROPELLERS

GRAND RAPIDS 2, MICHIGAN



S. D. Richardson, whose appointment to the new corporate position of Assistant Sales Manager of the Linen Thread Co., Inc., has been announced by D. L. Malcolm, Jr., vice president and general manager.

Linen Thread Shifts Strengthen General Sales Administration

Organizational changes to strengthen the sales administration of The Linen Thread Co., Inc., and to broaden headquarters coverage of markets have been announced by D. L. Malcolm, Jr., vice president and general manager. The company, a subsidiary of Indian Head Mills with headquarters in Blue Mountain, Ala., is one of the World's leading producers of commercial fish netting, sports netting, twine, and industrial threads.

S. D. Richardson, 34, has been promoted from Twine and Thread Product Manager to the newly created corporate position of assistant sales manager under Howard C. Johnson. Mr. Richardson has been with Linen Thread for ten years. He is a member of the Specifications Standards Committee, Thread Institute.

The company's new Twine and Thread Product Manager is T. Allen Rothwell, who will serve under Stewart Jenkins, Merchandising Manager. He was previously general assistant to the Controller, a position that kept him in close touch with the company's marketing activities.

Canco Names New Sales Manager for So. California

M. J. Pigott has been named Southern California district sales manager, with headquarters in Los Angeles, for the American Can Company's Canco division, it has been announced by Alexander Black, western area sales manager.

Formerly assistant district sales manager, Pigott succeeds Robert K. Carson, who has become manager of the Metropolitan New York Sales district.

Pigott lives at 5013 Auckland Avenue, North Hollywood, with his wife and four children.

Horn to Manage Sperry West Coast Operations

Appointment of William F. Horn as manager of Sperry Gyroscope Company field operations in a key six-state West Coast area is announced by company headquarters.

Mr. Horn will manage Sperry's field engineering division activities in the states of California, Nevada, Utah, Arizona, Colorado and Wyoming.

Establishment of Sperry's western operations on an area basis was developed upon the retirement of William I. Selover as the company's southwestern district manager in Los Angeles. Mr. Selover's retirement took place on May 31 after 45 years of service.

From area headquarters at 2200 East Imperial Highway, El Segundo, Calif., Mr. Horn will provide customer liaison, and direct negotiation and fulfillment of contracts involving repair, modification and overhaul of the company's diverse marine, aviation, military and industrial equipment.

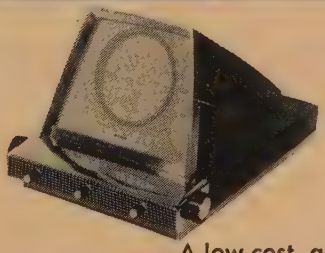
William F. Horn, newly appointed manager of field operations, West Coast area, Sperry Gyroscope Co.

L. W. Morrill Dies

The many friends of Leslie W. Morrill, 61, for the past 10 years northern California regional representative for Chrysler marine and industrial engines, were grieved to hear of his death recently in San Jose.

Mr. Morrill had been with Chrysler since 1924, with a brief interim when he had been associated with Atlas Imperial Diesel Engine Co. in Oakland. He leaves a wife and daughter.

new FOR DELIVERY FROM OUR STOCK



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To provide boat owners more convenience SHEPHERD MARINE is now dealer for SPERRY Navigating Aids. For reliability, you cannot equal Sperry performance and dependability. Navigating Aids available include the Radio Direction Finder, Loran, new Automatic Pilot, the Radar 5, and the Radar 10. You will like the new lower prices. Ask for complete specifications today.

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Waukesha Engines Expand West Coast Operations Line-up

Waukesha Motor Company, a leading manufacturer of heavy-duty internal combustion engines for over 50 years, announces plans for three new branches in Southern California.

Watts, Bakersfield, and Ventura are locations of Waukesha's three new branch operations. They are in addition to the present branch offices and warehouse located at Vernon, Calif. Both Watts and Vernon are included within the Los Angeles metropolitan area.

This new and extensive acquisition will enable Waukesha to increase its sales and service facilities for the entire Pacific Coast area. Added personnel and equipment will be employed.

Fibreboard Picks H. C. Hamlin To Head N. W. Sales

Fibreboard Paper Products Corporation has announced the appointment of a new sales manager for its Seattle-based Northern Packaging Division. H. C. "Buzz" Hamlin Jr. succeeded retiring Sales Manager C. A. Morgan in September, according to an announcement by George L. Langtry, general manager of the Northern Packaging Division.

"Mr. Hamlin's career in Fibreboard sales management started immediately after his World War II service as a bomber pilot in the U. S. Air Corps," Mr. Langtry said. "His wide experience in marketing our packaging products includes sales representation in Los Angeles, San Jose, and merchandising management at our San Francisco headquarters. "He is a capable successor for Corb Morgan, whose nearly 40 years with Fibreboard have been an invaluable addition to our growth in the Northwest," Mr. Langtry added.

Fibreboard, a leading manufacturing company of paperboard, folding cartons, and corrugated shipping containers in the West, operates paperboard mills and folding carton and corrugated container plants in the Northwest at Port Angeles, Sumner and Portland, Oregon.

RCA Adds to West Coast Small Fish Craft Sales Staff

Among five additional regional representatives named by the Radio Corporation of America in connection with an expanded small craft equipment sales program is D. S. Chios, who will handle RCA small craft equipment sales on the West Coast with headquarters at Los Angeles.

Kaar Appoints Dealer

Radio Communications Service, 905 B St., San Rafael, Calif., has been appointed Marin county dealer for Kaar radiotelephones, according to George Evans, Evans Radio Dock, Oakland.

Radio Communications Service will have a complete line of Kaar radio telephones on display, and will furnish service and parts.

Roy Mullins is Vice Pres., Sales, for Onan & Sons

Roy E. Mullin, who for the last year has been general sales manager of D. W. Onan & Sons Inc., Minneapolis, world's largest exclusive manufacturer of electric generating plants, has been promoted to vice president, sales.

He succeeds Hiram Hascall, who retired earlier this year after holding top Onan sales posts 16 years. Mullin will be responsible for sales and marketing activities internationally.

Since joining the staff, Mullin has conducted Onan's first International Distributors Sales Conference and has been instrumental in establishing a Distributors Advisory council, designed to increase sales by opening direct two-way policy discussion between distributors and the company's Minneapolis headquarters.

Standard Steel Publishes Data on Meal Dryers

Comprehensive data in compact form is provided for Standard fish meal dryers in a new bulletin, No. 596, issued by Standard Steel Corporation, 5001 South Boyle Ave., Los Angeles 58, the world's largest manufacturer of rotary dryers for the fish meal industry.

Included in the new publication are photographs of dryer installations and auxiliary control equipment, a flow diagram of the rotary drying operation, description of the Standard fish meal drying method, and design data. High protein value and great yield are gained through the use of the Standard low temperature rotary dryer.

John Mueller Appointed Ad Director for Enterprise

John J. Mueller, II has been appointed director of advertising for the Enterprise Division, General Metals Corporation and Enterprise Engine & Machinery Co., General Metals sales subsidiary. In announcing the appointment, Arthur W. Ostrander, vice president for sales of General Metals, stated that Mueller will also direct the advertising of the Foundry and Forge Division from his office in San Francisco.

Raytheon Offers Battery Powered Echo Sounder

This fall Raytheon Company unveils a portable, self-powered Fathometer depth sounder to the fishing industry.

Small boat owners who do not have extra electrical power in their boats will be able to enjoy the safety and convenience of electronic depth sounding with Raytheon's new "Angler" DE-708, which can probe the depth of water and locate fish.

The new transistorized device, which requires no installation, is so inexpensive, compact, and easily portable that it is also expected to be an attractive accessory for fishermen who rent boats.

It will be marketed through Raytheon's marine dealers in fishing centers.

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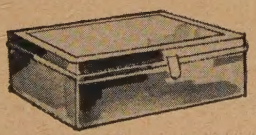

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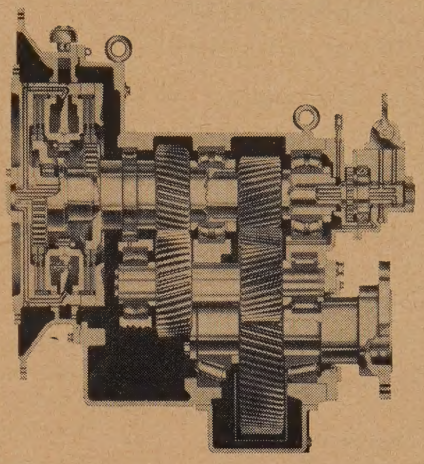
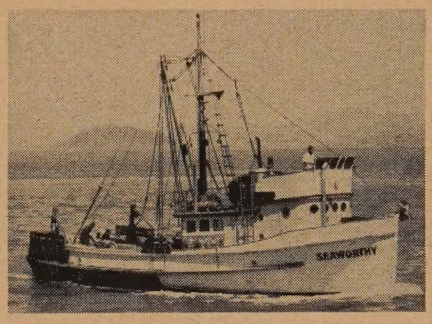
S-N GEARS



Chosen Again for PROVEN DEPENDABILITY



SEAWORTHY is one of the hardest working fish boats operating out of San Francisco. Recently repowered, her original S-N gear saw ten years of round-the-clock service, six days every week. Owner, Frank Alioto says, "We work Seaworthy hard, but take the best care of her and buy the best equipment we can find. We've had very fine service from our original SNOW-NABSTEDT reduction gear and naturally when it came time to replace it, there was no question about what make we wanted."

YOU can get the dependable performance that Seaworthy's owner has enjoyed by specifying efficient and economical S-N 3900 gears. For complete information or literature, contact your S-N distributor or write to The Snow-Nabstedt Gear Corporation, Hamden, Connecticut.

YOUR BEST BUY IN DEPENDABLE GEARS

SNOW-NABSTEDT
Transmission Engineers
FOR OVER HALF A CENTURY

ADVERTISING INDEX

American Marine Paint Co. 17
Auto Engine Works 44
Beebe Company, The 16
Bryant's Marina 28
Carron Net Co., The 28
Carruthers Company, E. H. 36
Chrysler Corporation 25
Classified Advertising 28
Columbia River Packers Association 39
Consolidated Net & Twine Co. 26
Deming & Gould 4
Federal Propellers 41
Frohman & Sons, L. H. ... 42
General Petroleum Corporation 27
Gold Medal Netting 2
Goodrich Sponge Products, Spongex Division, B. F. .....Inside back cover
Hatch & Kirk 28
Hiller, Paul 28
International Paint Co. .. 34
Kelley-Clarke Co. 38
Kettenburg Boat Works .. 28
Kurashiki Rayon Co. 22
Linen Thread Co., The ..2, 34
Lister-Blackstone, Inc. ... 16
Marine Construction & Design Co. 29
Moffitt, Inc., Lucian Q. ... 36
Murphy Diesel Co. 20
Mustad & Son, O. 16
N C Marine 28
New England Fish Co. 38
Nordby Supply Co. 16
Oceanic Sales Co. 39
Onan & Sons, D. W. 2
P & L Manufacturing Co. 13
Pacific American Fisheries, Inc. 4
Pacific Fisherman 14
Pacific Fishing & Trading Co. 26
Pacific Towboat & Salvage Co. 28
Pauls Netting 34
Peelers Company, The ... 13
Puget Sound Engineering, Inc. 28
Sanden Company, Ltd. ... 33
San Juan Fishing & Packing Co. 40
Seattle Boiler Works 36
Sesco, Inc. 42
Shell Oil Co. 30
Shepherd Marine 42
Shore Line Diesel Maintenance 28
Snow-Nabstedt Gear Corporation 43
Standard Oil Co. 19
Standard Steel Corporation 44
Starr Net Co., A. M. 26
Stern Can Co. 43
Stix, Inc., Robert L. 40
Tacoma Boat Building Co. 26
Toyo Rayon Co. ..... Inside front cover
Tubbs Cordage Co. 3
Twin Disc Clutch Co. 3
Vilter Manufacturing Co. . 32
Vita Food Products, Inc. .. 36
Waukesha Motor Co. ..... Back cover
White & Sons, Inc., Wilfrid O. 29

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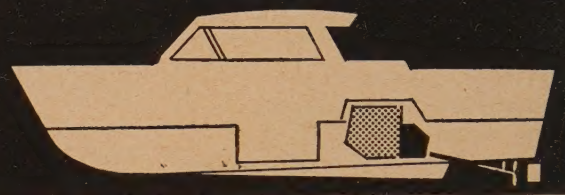
FOR PLEASURE AND WORK BOATS ...WITH LIMITED ENGINE SPACE



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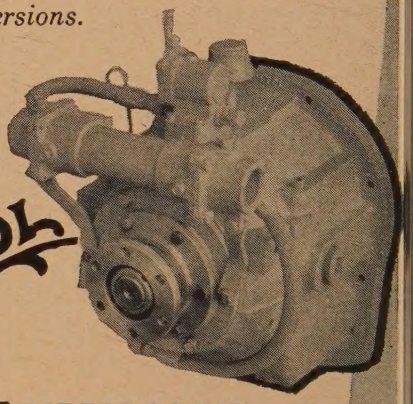

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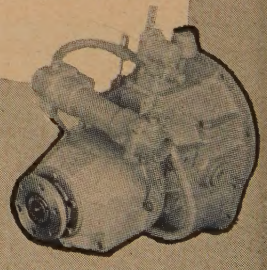
reverse and reduction gear provides full forward to full reverse in just 3 seconds! Available in standard clutch model only in ratios 1½-2, 2½ and 3-1.



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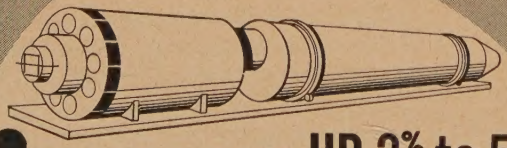

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Nothing fishes so long or so well as B. F. Goodrich seine floats. Made of miracle PVC, they are lightweight and permanently buoyant. In a typical purse-seine operation, 2200 B. F. Goodrich floats replaced 3500 cork floats. Figure this on your nets and you can see what a difference there'll be in handling. Plus the fact that B. F. Goodrich floats *never* waterlog to create extra weight in the water.

Add, too, that B. F. Goodrich plastic seine floats need no maintenance, do resist marine growth, oil, gasoline and salt water.

So ask your supplier now before endless maintenance and replacements start. B. F. Goodrich floats come in 17 sizes ranging from 3″ x 1½″ to 6″ x 14″.

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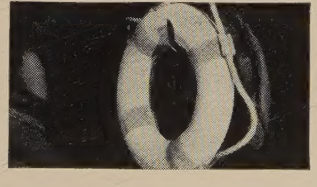

Now available! B. F. Goodrich ring life buoys for fishing boats. U.S. Coast Guard approved and accepted by commercial lines, these rings have all the advantages of the floats.

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B.F.Goodrich ***Spongex seine floats***

REPOWERING THIS 78-FT. SEINER...

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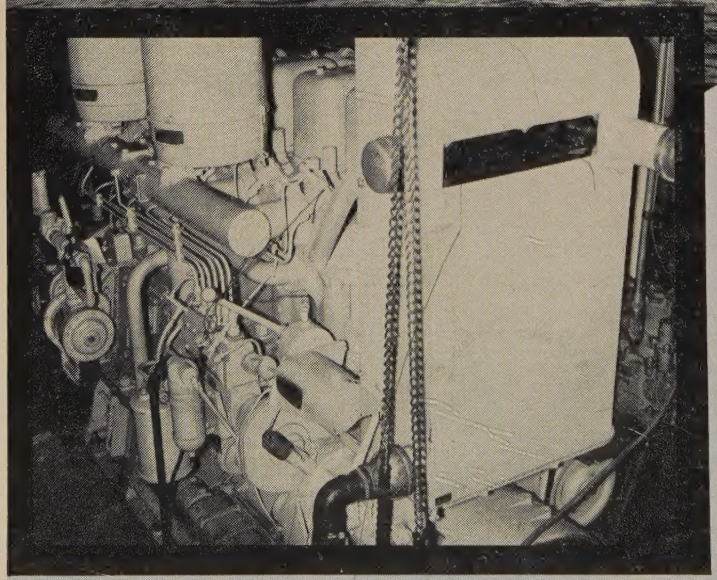

447 **Waukesha *Defender* (Model LRDBCM) Marine Diesel,** with Twin Disc 3:1 hydraulic reduction-reverse gear.

The 78-ft. seiner *American Star* logged 11 knots on her trials. Then, on her first northern run, Seattle to Ketchikan, Alaska, she clipped 12 hours off the average fishing boat time of 72 hours, making it in 60 hours. The star of this performance is the Waukesha *Defender* Marine Diesel with which she has been repowered. Her owners, Capt. Ed Hansen and his brother, Don Hansen, Chief Engineer, not only liked the full flow of smooth, flexible power of their Waukesha, but its colorless exhaust and astonishing lack of vibration. The *Defender* will keep on turning out 335 hp at 1200 rpm all 24 hours of the day. It is a six-cylinder Diesel, 8½ x 8½-in. bore and stroke, 2894 cu. in. displacement. Installation was made by Piston Service, Inc., Seattle, Wash. Send for Bulletin 1721.

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